

RRT III

Proposed Designation Malloys Bay, Expansion of USS Monitor NMS and

An Update on NOAA's Remediation of Underwater Legacy Environmental Threats (RULET) Database

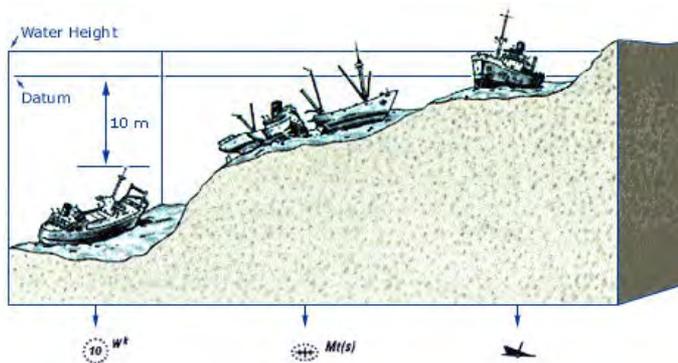
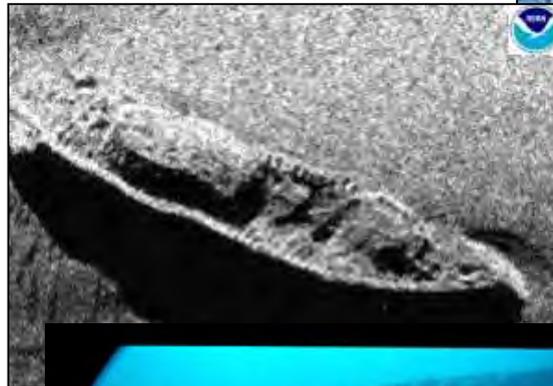
NOAA Office of National Marine Sanctuaries
Lisa Symons



ENVIRONMENTAL
RESEARCH
CONSULTING

NOAA interests in shipwrecks

- Shipwrecks are difficult to categorize but there are several types:
 - Historic Wrecks
 - Contemporary Wrecks
 - Derelict Vessels
- Navigation
- Pollution
- Historic Protection



NATIONAL MARINE SANCTUARY SYSTEM



The Office of National Marine Sanctuaries serves as the trustee for a system of 14 marine protected areas encompassing more than 170,000 square miles of marine and Great Lakes waters from Washington state to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. For more information on the National Marine Sanctuary System, visit: <http://sanctuaries.noaa.gov>



VIRGINIA

Fairfax County

Prince William County



Proposed Boundary

Stafford County

Charles County

MARYLAND

Dumfries

Marbury

Quantico

Sandy Point

Mallows Bay

Tank Creek

Aquia Harbor

Smith Point

Riverside

Brooke

Brent Point

Potomac River

King George County



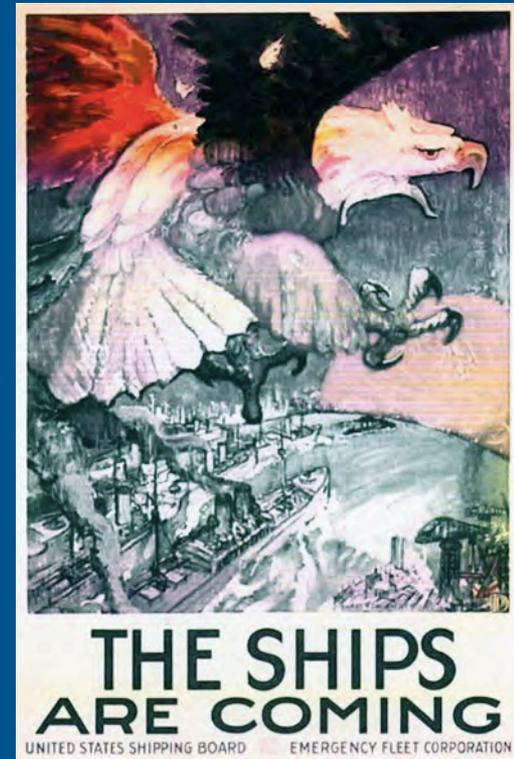


An Important Chapter in US History

April 1917

The US Enters WWI:

The Call for One Thousand Ships in 18 Months!

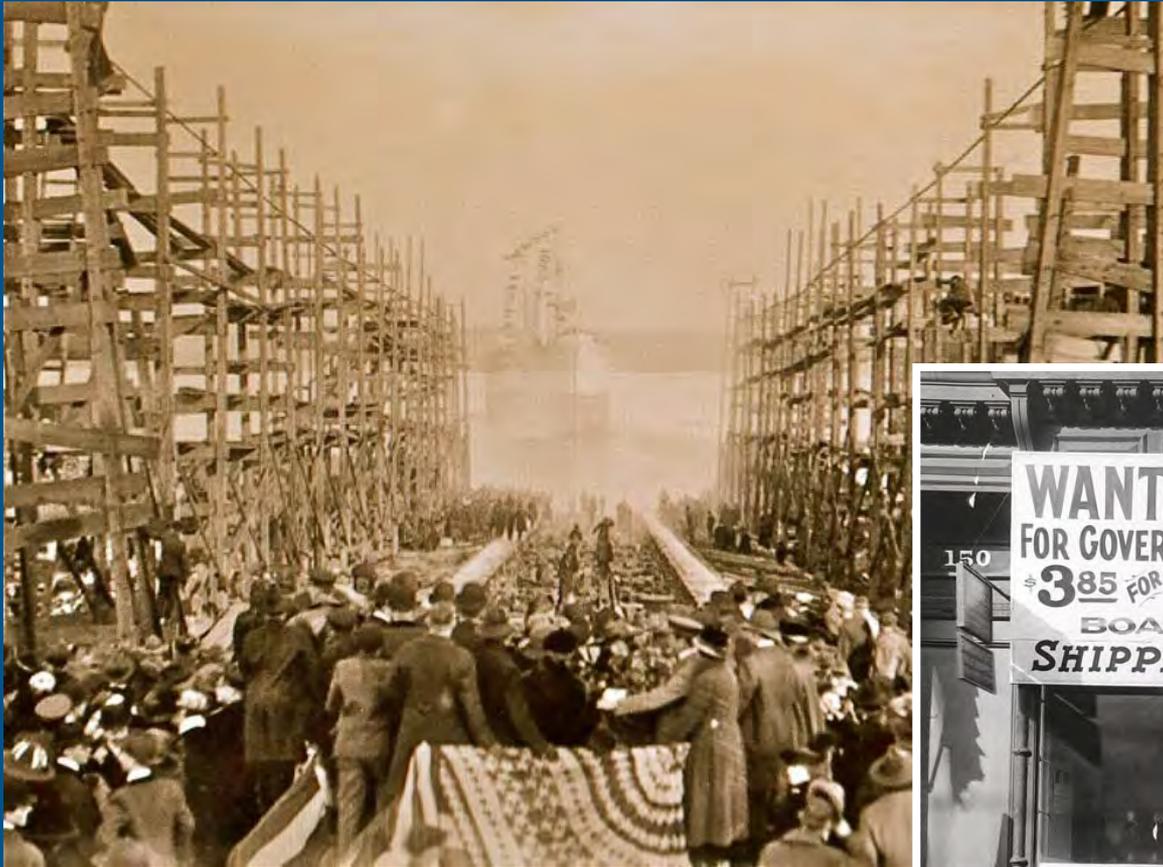


A Nationwide Priority

Map 14. Distribution of United States Shipyards Represented by Vessels Identified in Mallows Bay, Maryland as of 11 August 1929



Major Jobs Program and Community Development



WANTED 8000 LABORERS.
FOR GOVERNMENT WORK AT HOG ISLAND SHIP-YARD.
\$3.85 FOR 10 HOUR DAY. STEADY WORK.
BOARD & LODGING ADVANCED
at 15¢ Per Day Against Wages
SHIPPING EVERY DAY. APPLY HERE.

LABORERS WANTED
AT HOG ISLAND GOVERNMENT SHIPYARD
35¢ AN HOUR
\$3.85 A DAY
A CHANGE TO LEARN A NEW TRADE TO GET HIGHER WAGES
APPLY 150 3 AVE. - 15 S. W.

SEE LABORERS WANTED
AT ONCE - SHIPYARD
* FOR 10 HOUR DAY - \$3.85 PER DAY

PUBLIC LECTURES
LABOR UNION

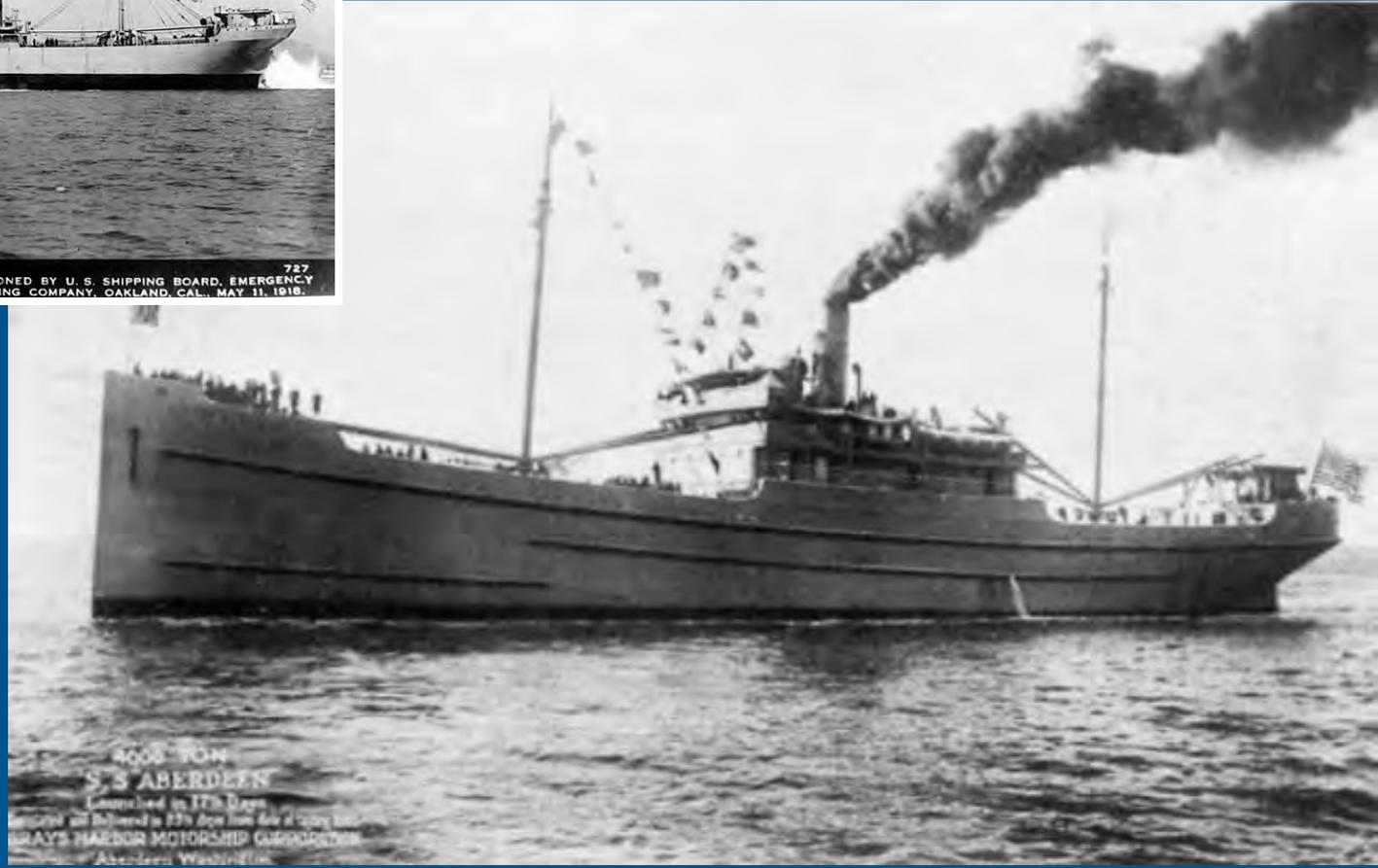
Half
3.50

Eight Ship Designs

Photo # NH 65121 SS Pasadena on trials in San Francisco Bay, 11 May 1918. She later became USS Pasadena



ULL No. 116, S. S. "PASADENA" ON "TRIAL TRIP"; REQUISITIONED BY U. S. SHIPPING BOARD, EMERGENCY LEET CORPORATION, 402' 6" X 53' X 26' 6". MOORE SHIPBUILDING COMPANY, OAKLAND, CAL., MAY 11, 1918.



4000 TON
S. S. ABERDEEN
Launched in 17th Days
Launched and delivered in 27th Days from date of laying keel
GRAY'S HARBOR MOTORSHIP CORPORATION
Aberdeen, Washington

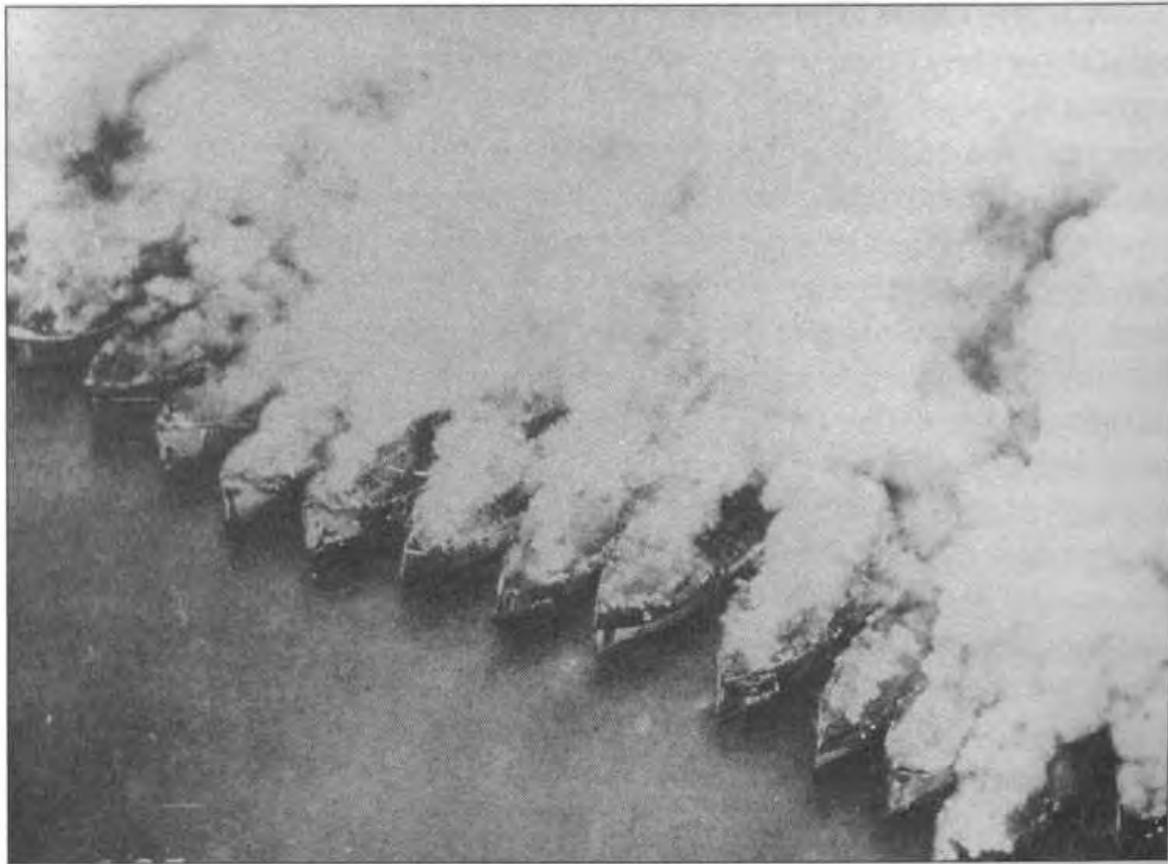
July 4, 1918



Mallows Bay, circa 1925



November 7, 1925



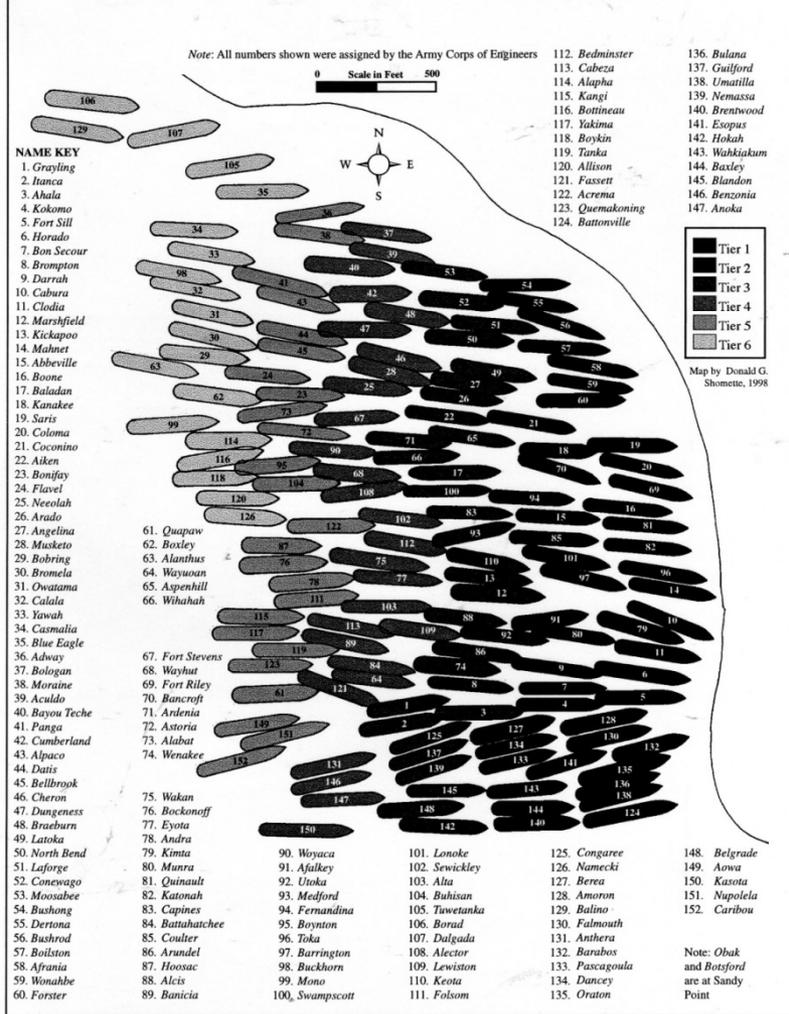
Thirty-one wooden U.S. Shipping Board steamers go up in smoke on November 7, 1925, the greatest destruction of shipping at one time in the history of the Potomac River. Courtesy National Archives and Record Service

Ship Breaking Operations



Mallows Bay, circa 1929

Map 3. Disposition of USSB Steamship Hulks in Mallows Bay 11 August 1929



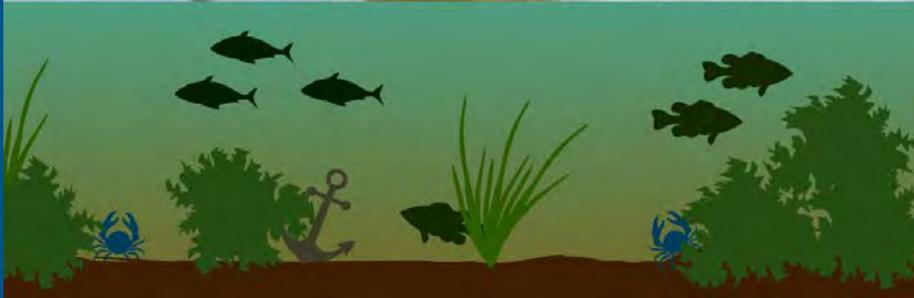
Maritime Landscape, circa 1990s



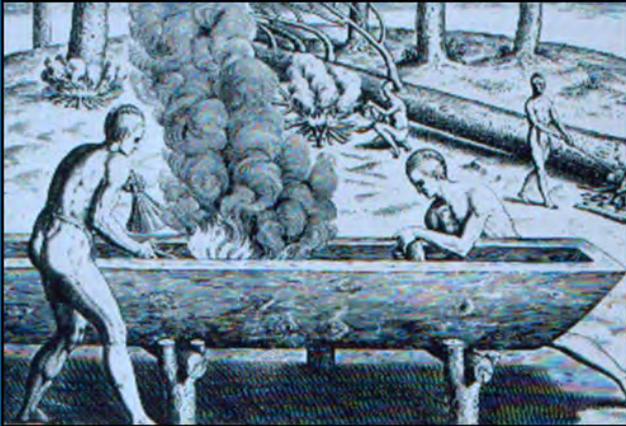
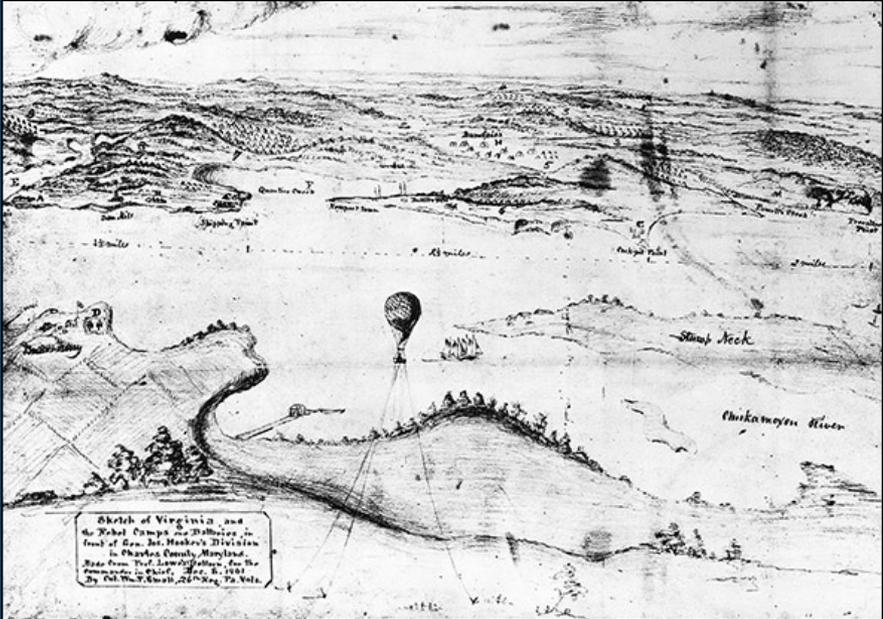




Ecological Significance

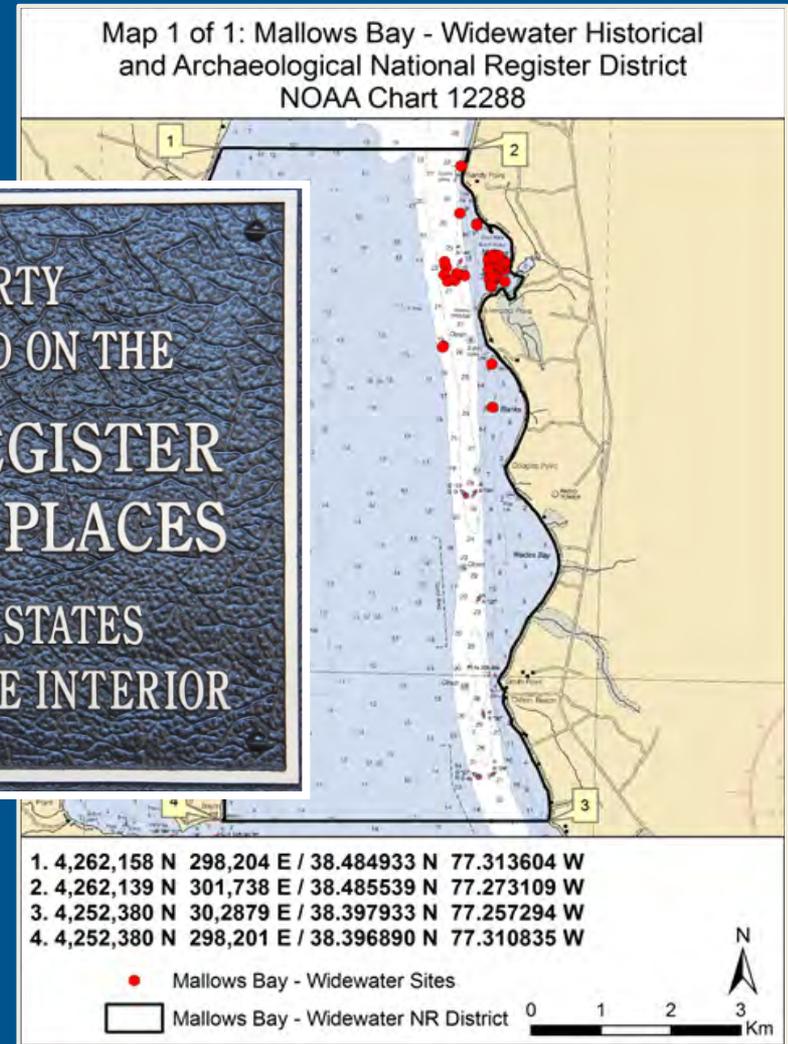
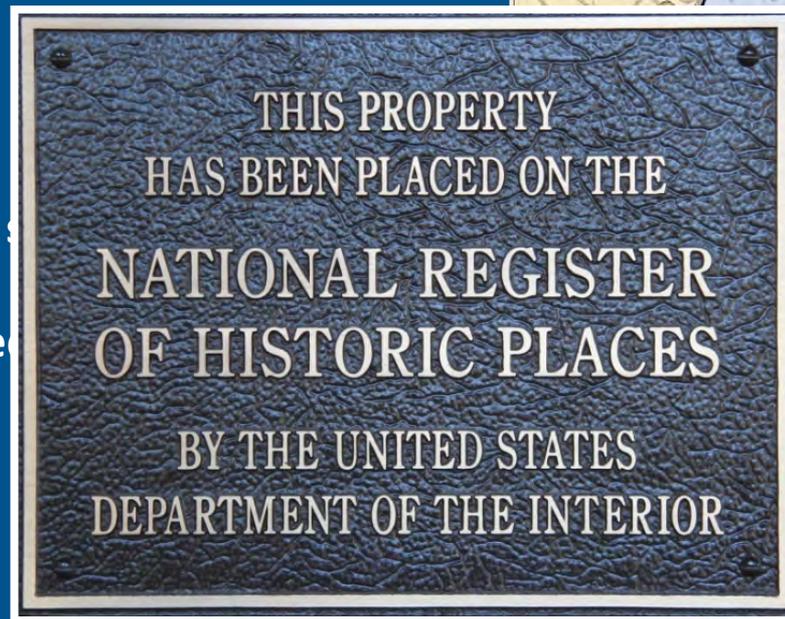


Cultural Heritage

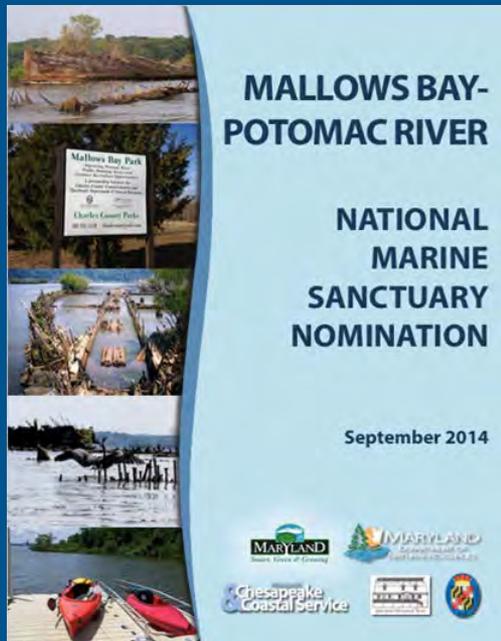


National Register of Historic Places, April 2015

- 11,000+ acres within MD state waters
- 124 vessels
- 101 USSB steamships
 - Varying degrees of significance
- 23 other sites not related to USSB
- 8 vessel debris piles
- 6 non-vessel sites
- Nationally significant under NRHP
 - Criteria A, C, and D



Mallows Bay-Potomac River National Marine Sanctuary Nomination



Charles County Dept of Tourism
MD Dept. of Economic Development
Atlantic Kayak

The Nature Conservancy
National Aquarium (Baltimore)
Alice Ferguson Foundation

College of Southern MD
Charles County Public School System

National BASS
Bass Anglers Sportsman Society

Piscataway-Conoy Tribe
Southern MD Heritage Area Consortium

Patuxent Naval Air Station

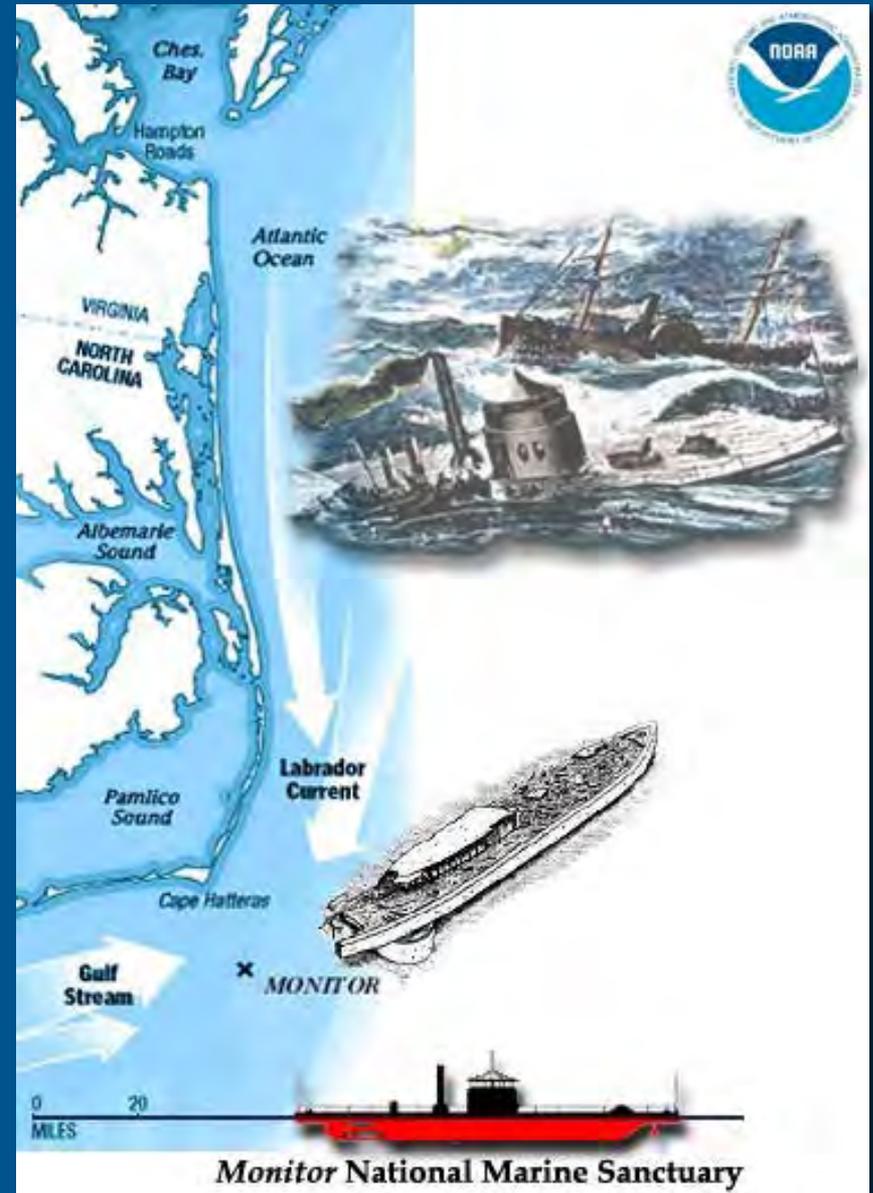
Private Citizen / Historian





Monitor National Marine Sanctuary

- 16 miles off the coast of Cape Hatteras in the Graveyard of the Atlantic
- Protects the Civil War Ironclad USS *Monitor* discovered in 1973 by a Duke University research team
- America's First National Marine Sanctuary designated in 1975

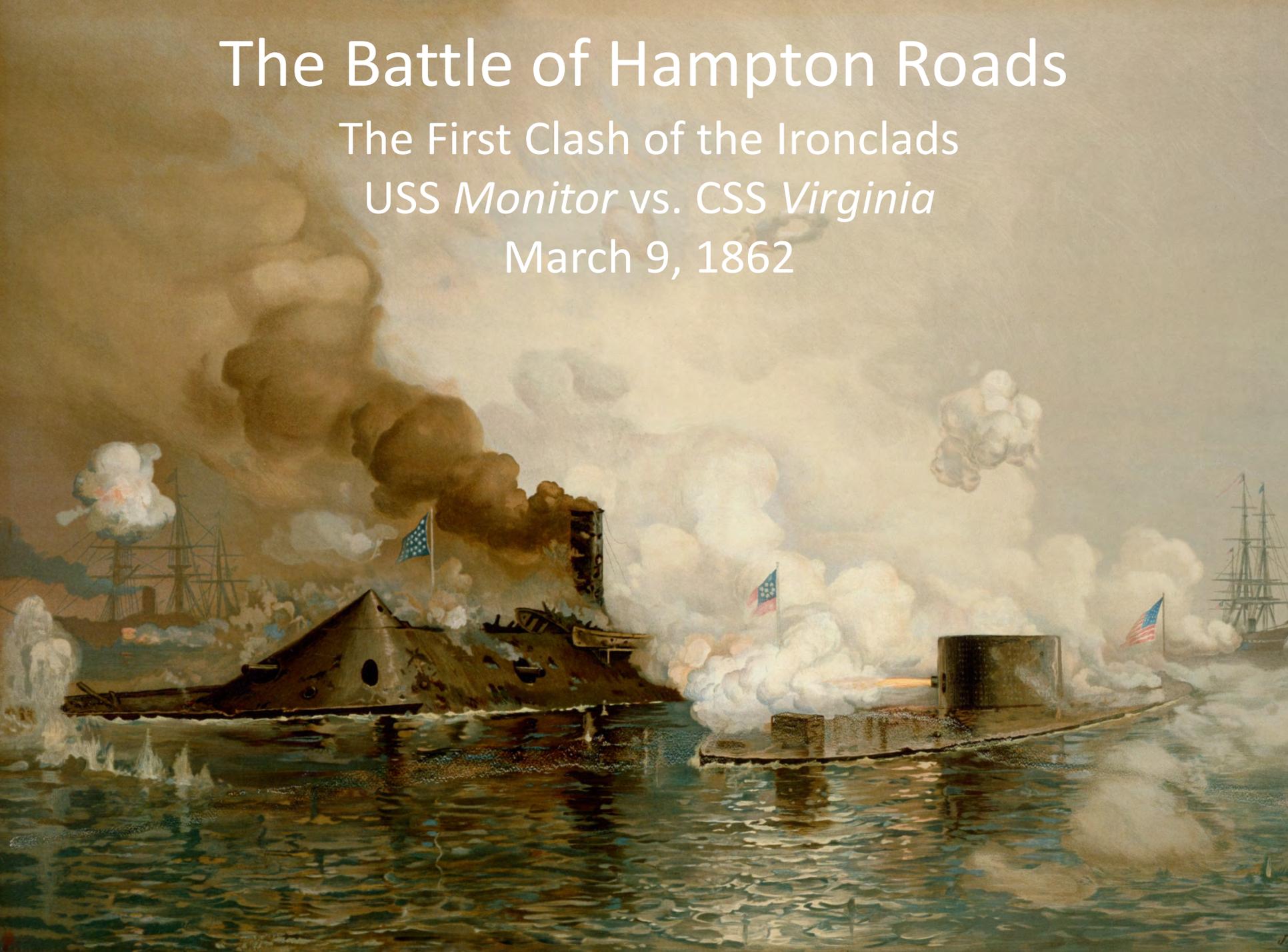


The Battle of Hampton Roads

The First Clash of the Ironclads

USS Monitor vs. CSS Virginia

March 9, 1862



January 31, 1862

USS *Monitor* sinks in a storm off Cape Hatteras while
under tow by the USS *Rhode Island*



16 Officers and Crew Lose Their Lives

A History of Preservation



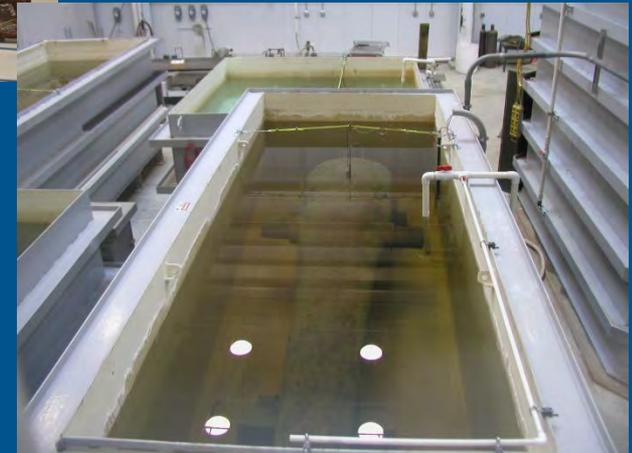


USS *Monitor* Center at The Mariners' Museum



USS Monitor Center

Batten Conservation Laboratory Complex



USS *Monitor* Heritage Trail Signs



Four signs currently installed

- Beaufort, NC
- Newport News, VA
- Drewry's Bluff, National Battlefield Park
- Greenpoint *Monitor* Museum, Brooklyn, NY

Additional six signs planned for installation

- New York City (2)
- Baltimore MD
- Syracuse, NY
- Newport News, VA (2)



Monitor Sailors Burial at Arlington National Cemetery March 8, 2013



151 Years After the Battle of Hampton Roads

Preserving the *Monitor*

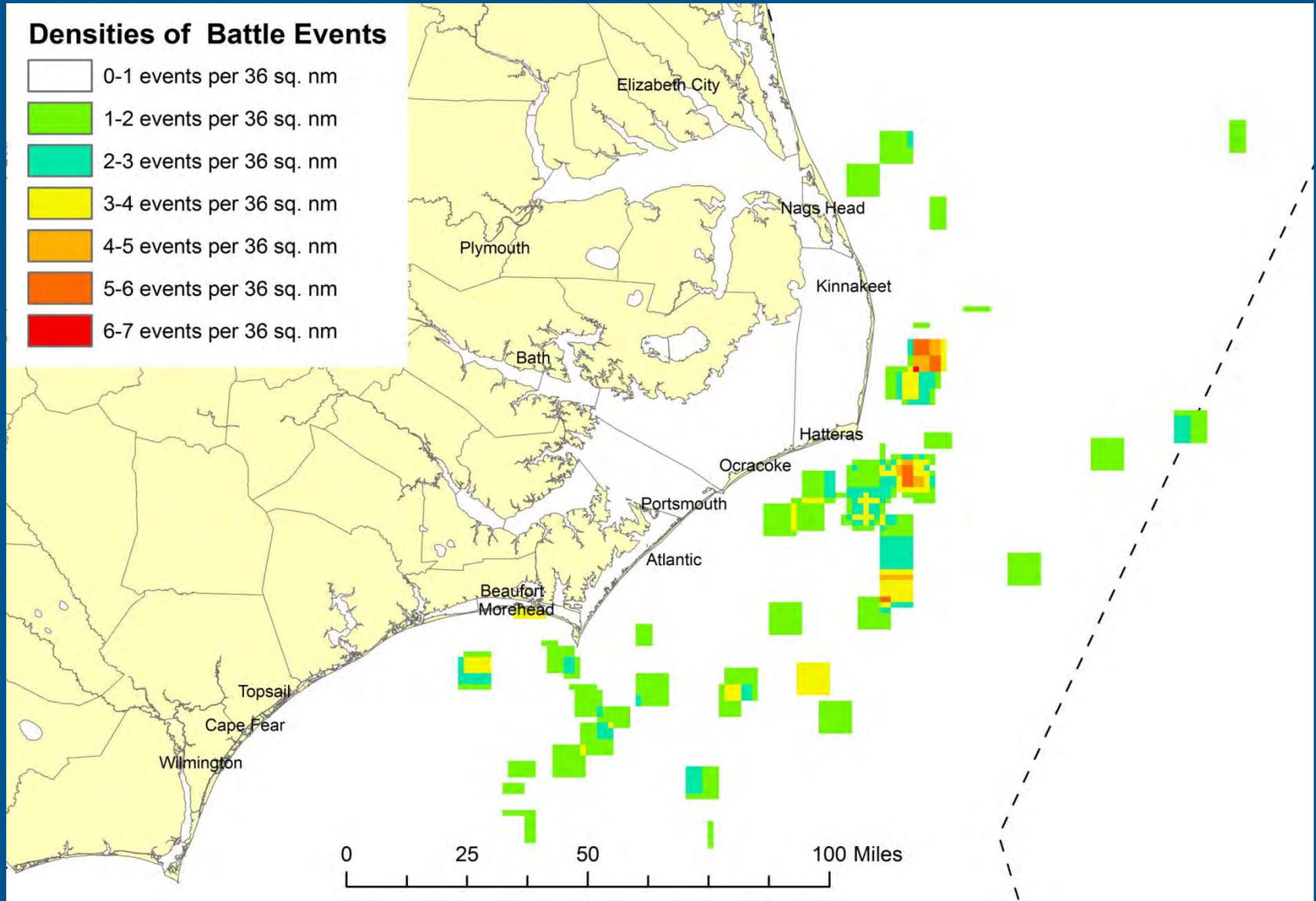


For over 40 years, the Monitor National Marine Sanctuary has served as a special place honoring the iconic Civil War ironclad *Monitor* and the memory and service of Civil War sailors.

WWII Battle of the Atlantic: NOAA's Battlefield Landscape Study 2008-2016

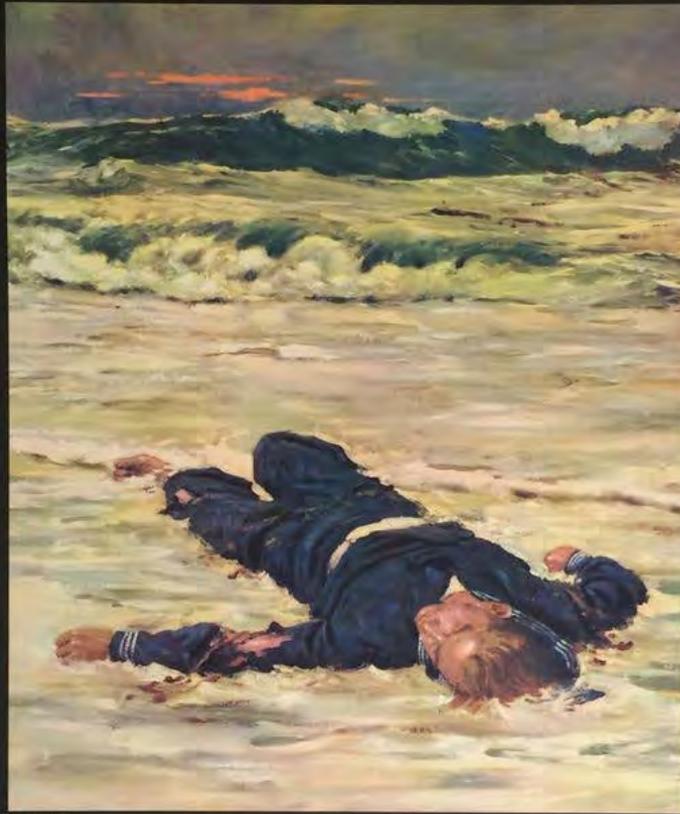


Density of Battle-Related Events









LARRY KING PAGES

a careless word...

A NEEDLESS LOSS

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The life-line is firm
thanks to the
MERCHANT NAVY

when in doubt-
**LIGHTS
OUT!**



THIS POSTER IS PUBLISHED BY THE HOUSE OF SEAGRAM AS PART
OF ITS CONTRIBUTION TO THE NATIONAL VICTORY EFFORT.



**"YOU BET I'M GOING
BACK TO SEA!"**

Register at your nearest U.S. Employment Service Office

U. S. MERCHANT MARINE

War Shipping Administration



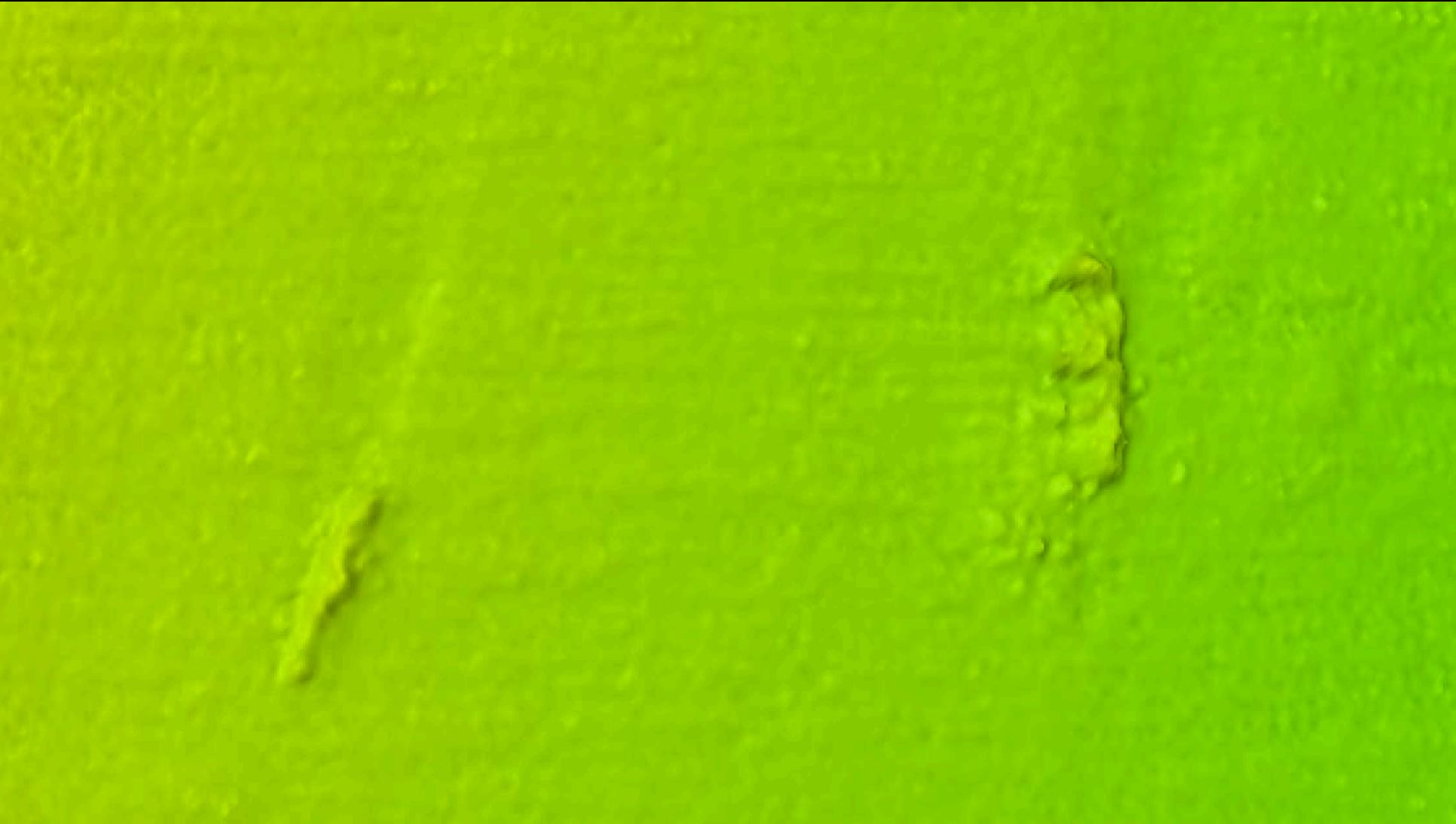
MAN THE VICTORY FLEET

An Underwater Battlefield: The KS-520 Convoy

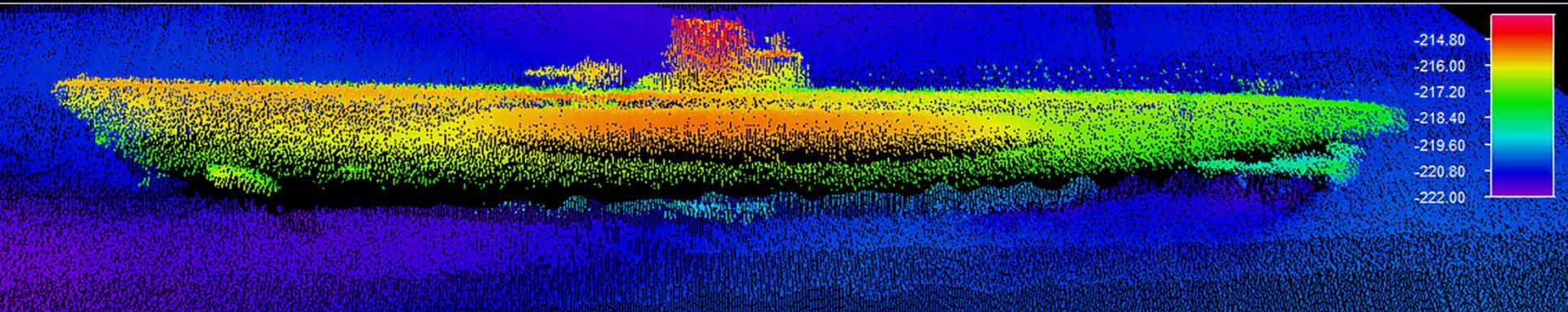
**Historical Collections of the Great Lakes
Bowling Green State University**



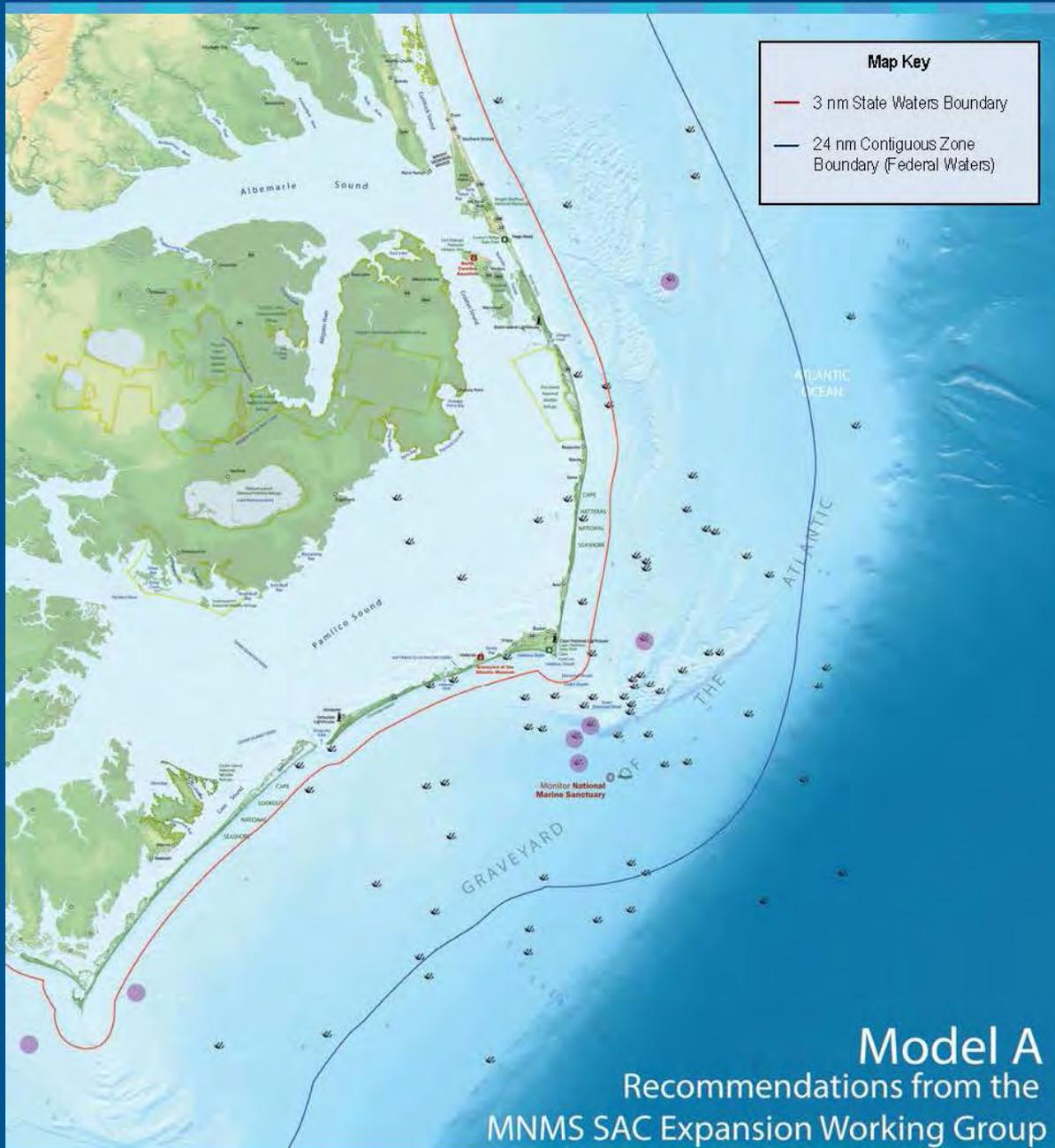
Discovery of U-576



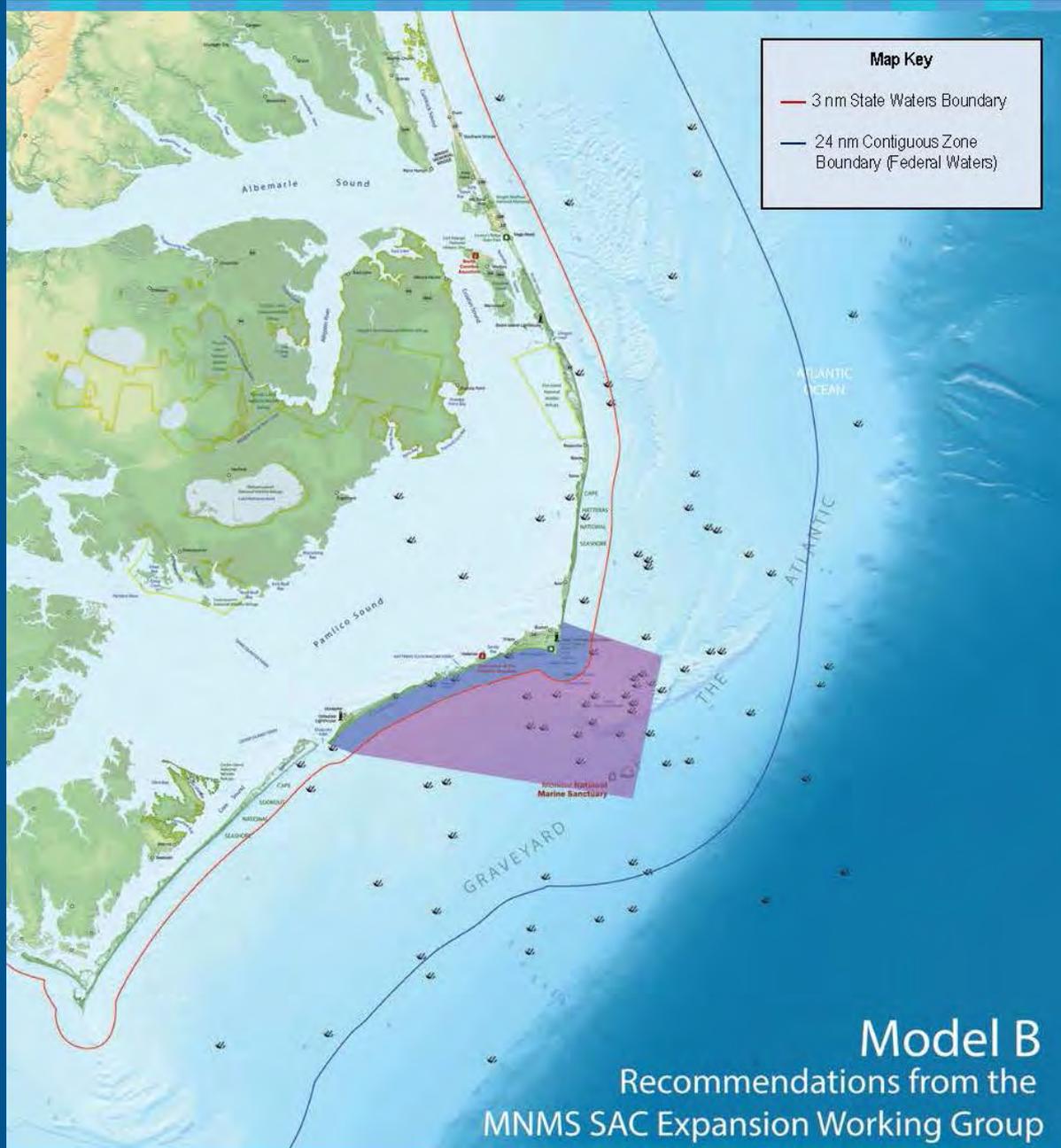
Discovery of U-576



MONITOR NATIONAL MARINE SANCTUARY

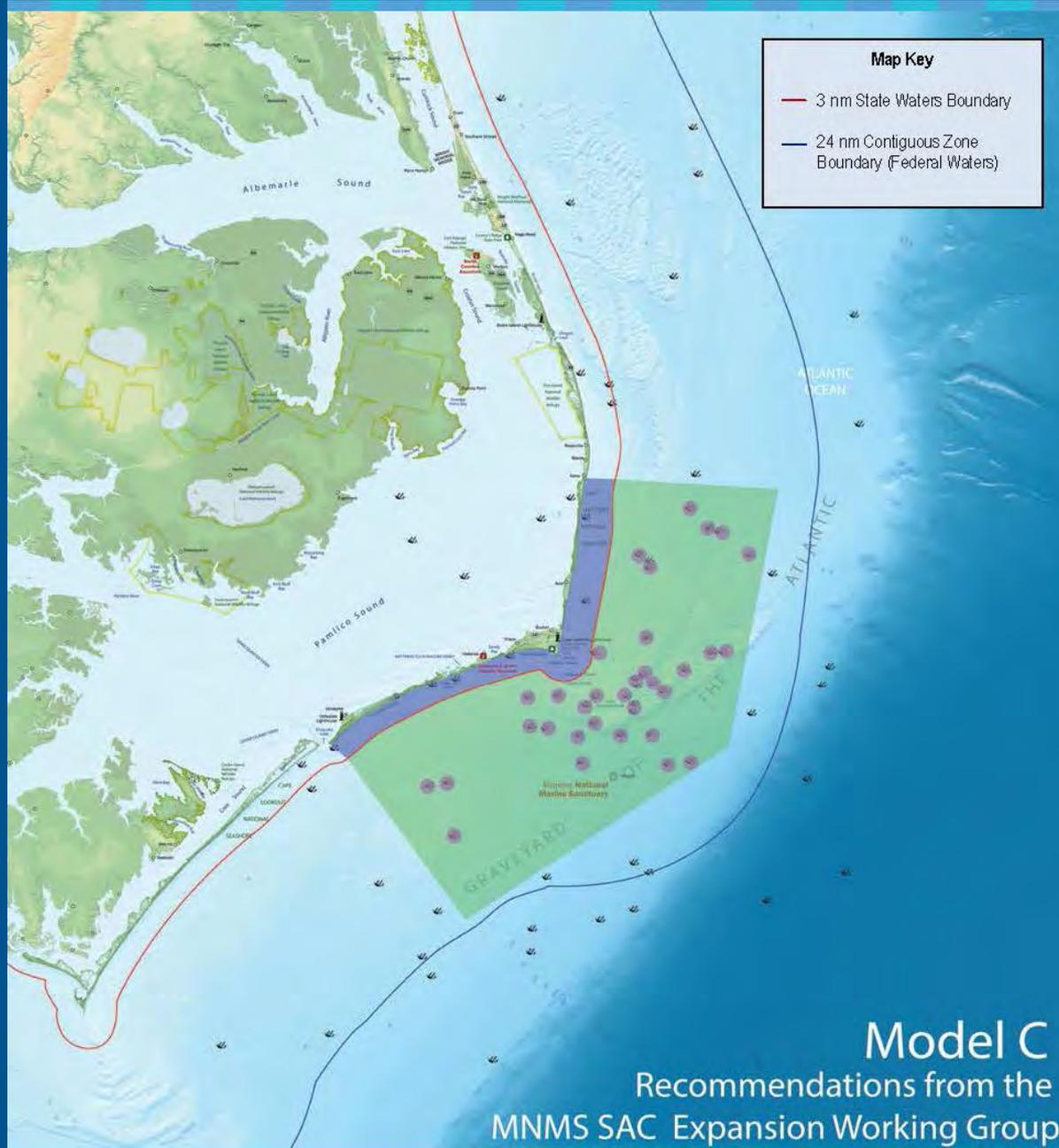


MONITOR NATIONAL MARINE SANCTUARY

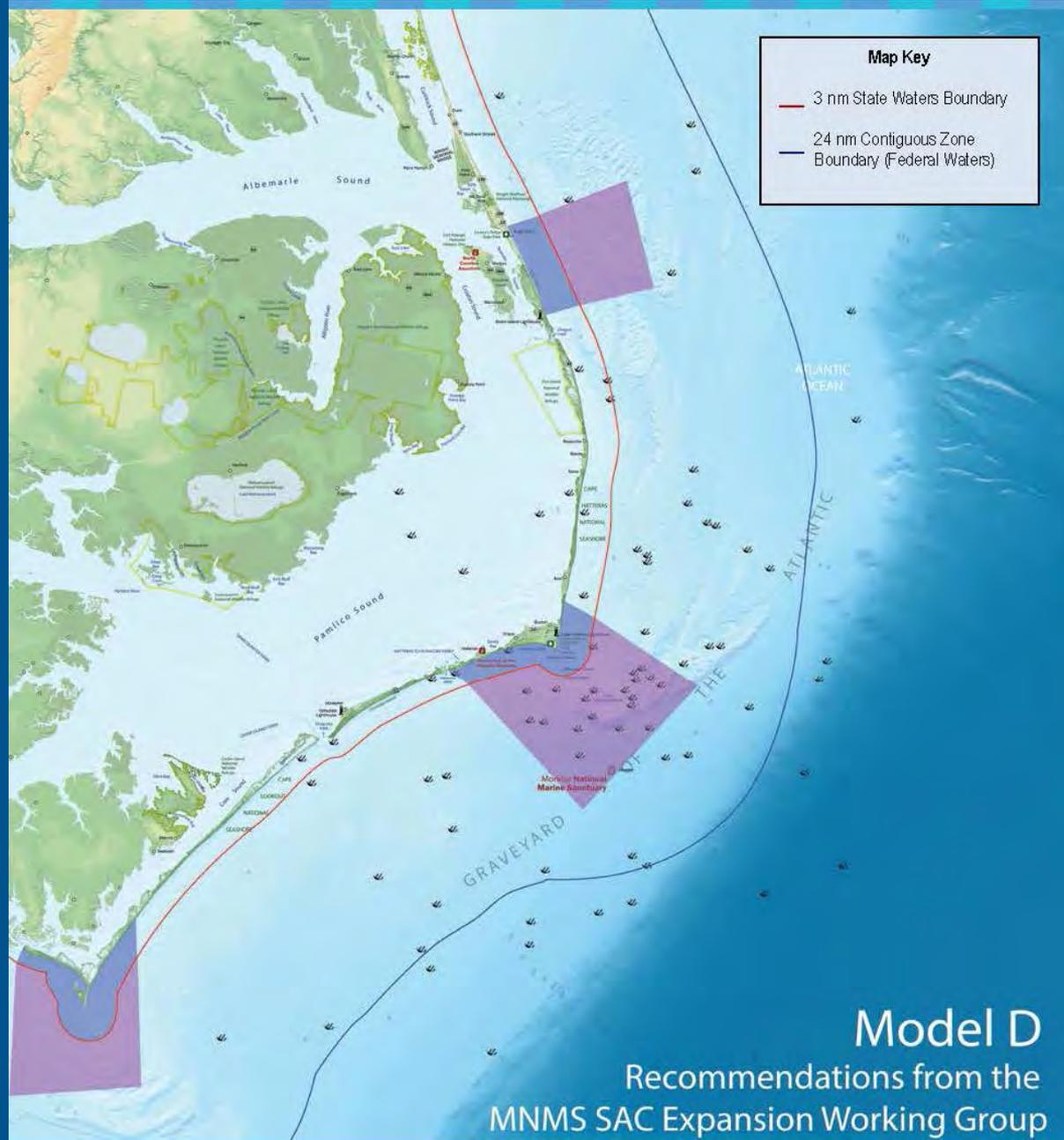


Model B
Recommendations from the
MNMS SAC Expansion Working Group

MONITOR NATIONAL MARINE SANCTUARY



MONITOR NATIONAL MARINE SANCTUARY



The NEPA Process

- **Phase 1:** Intent, Scoping Meetings, Public Comments
- **Phase 2:** Draft Documents (DEIS, DMP, Proposed Rule), Public Hearings
- **Phase 3:** Final Documents, Agency and Legal Reviews, Clearances, Publication

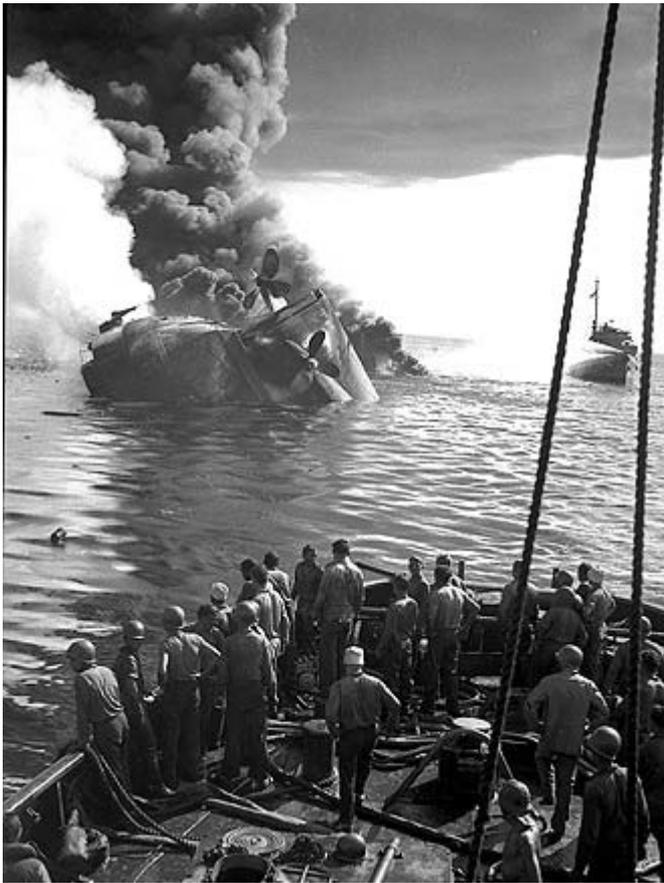
Timeline: 2-3 years





S.S. Jacob Luckenbach

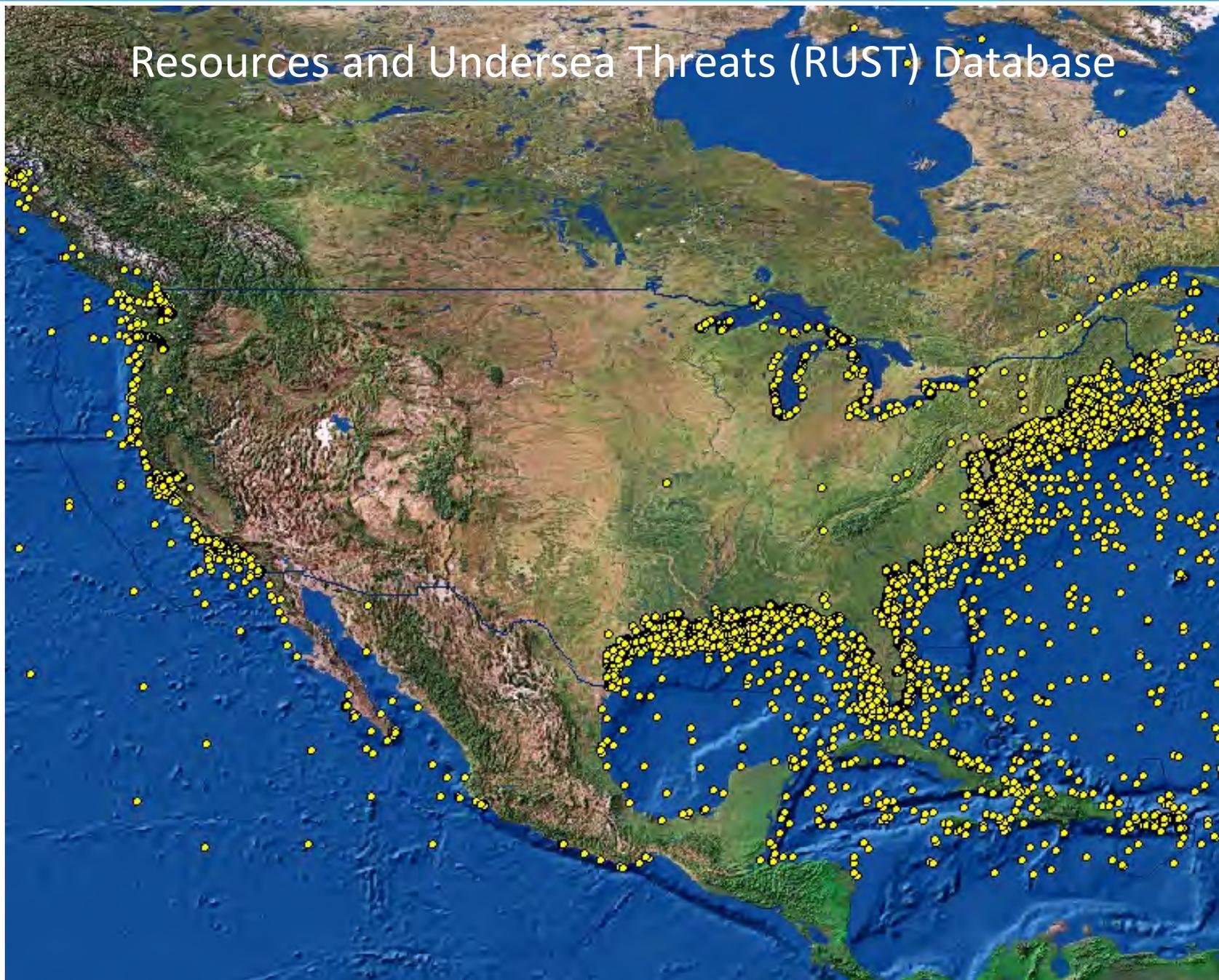
Sank on July 14, 1953 off San Francisco. Oil removed in 2003



USS Mississinewa,

November, 1944. Sunken in Ulithi Atoll in Federated States of Micronesia.
Oil removed in 2003

Resources and Undersea Threats (RUST) Database



RUST



Remediation of Underwater

Legacy Environmental Threats (RULET)

Initial Narrowing Criteria: 30,000 to 573

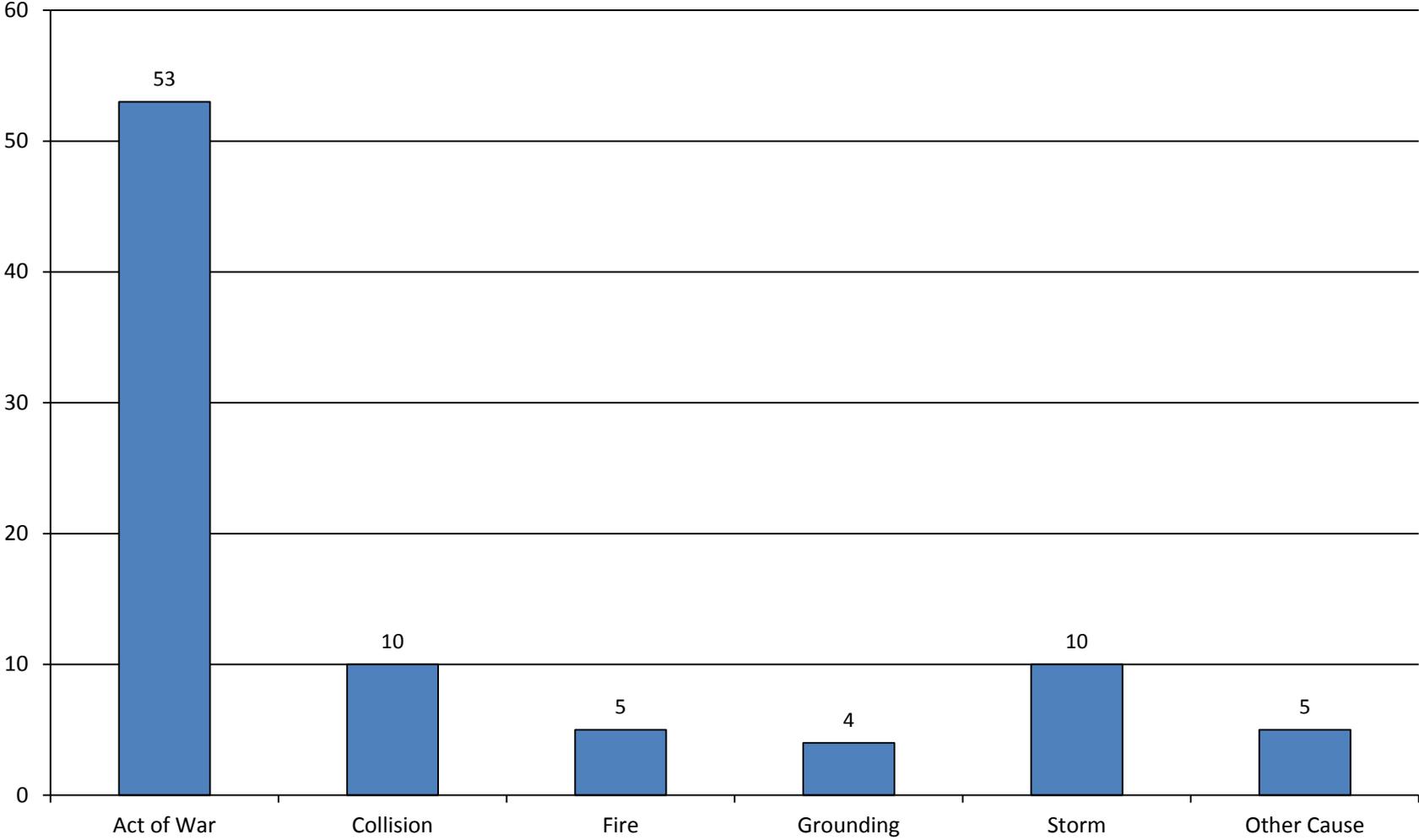
- ~~Post 1910~~ ~~Post 1902~~ Post 1891 (UK uses 1873)
- Steel Hull (as well as iron or concrete)
- Tanker/Tank Barge
- >200' or 1000GT

RULET: ~~233~~ ~~228~~ ~~162~~ ~~115~~ 107

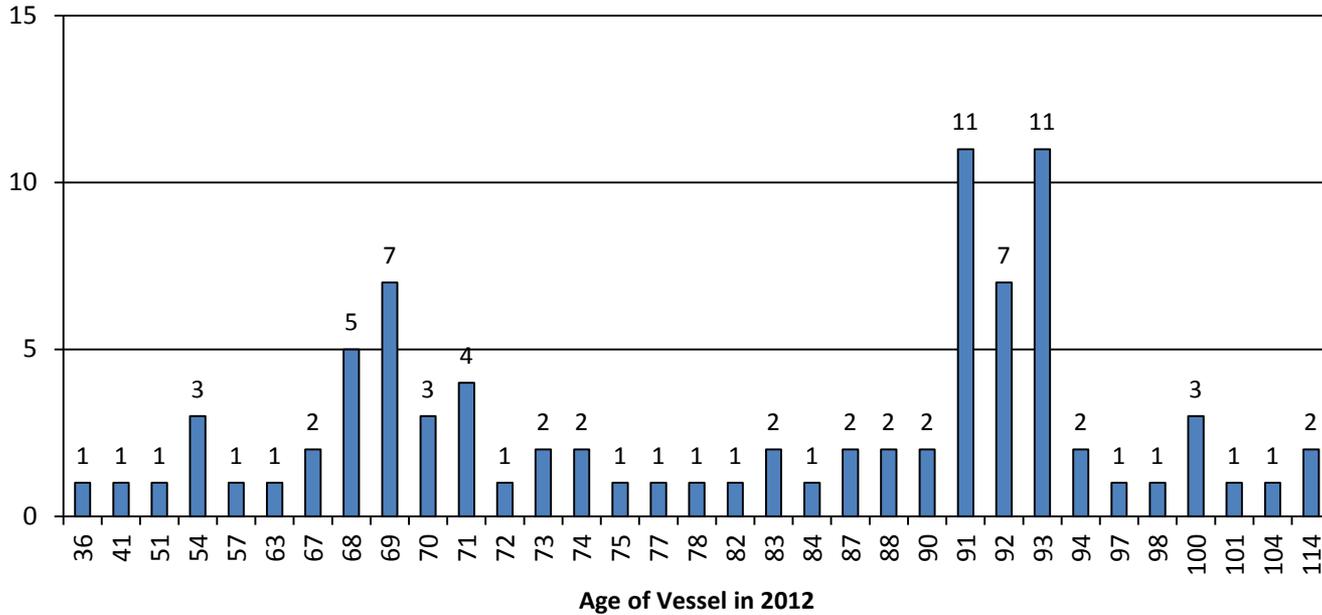
High Priority: ~~58~~ ~~28~~ 23

Reported to be leaking: 10

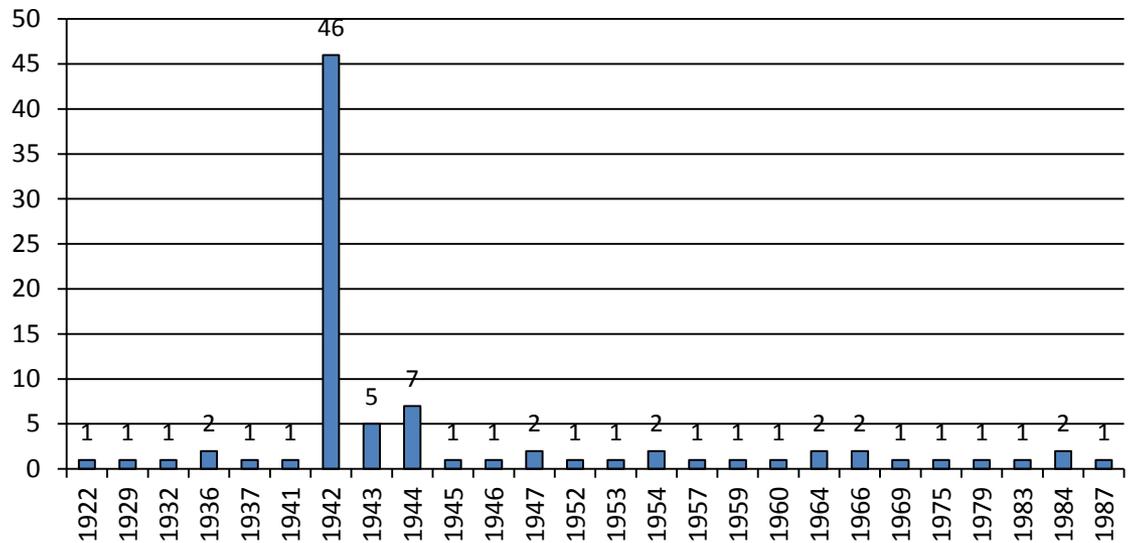
Number of Vessels Lost by Cause

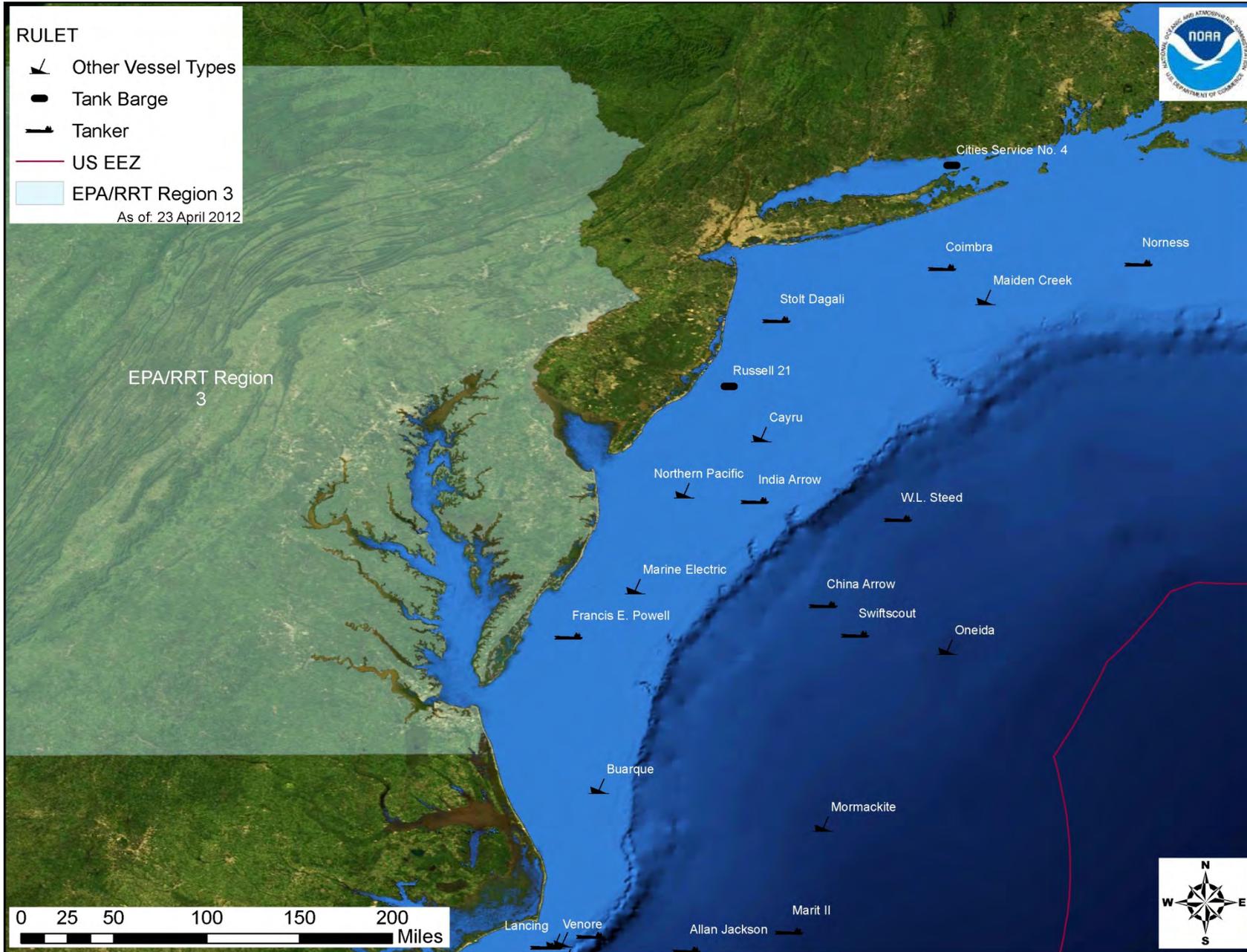


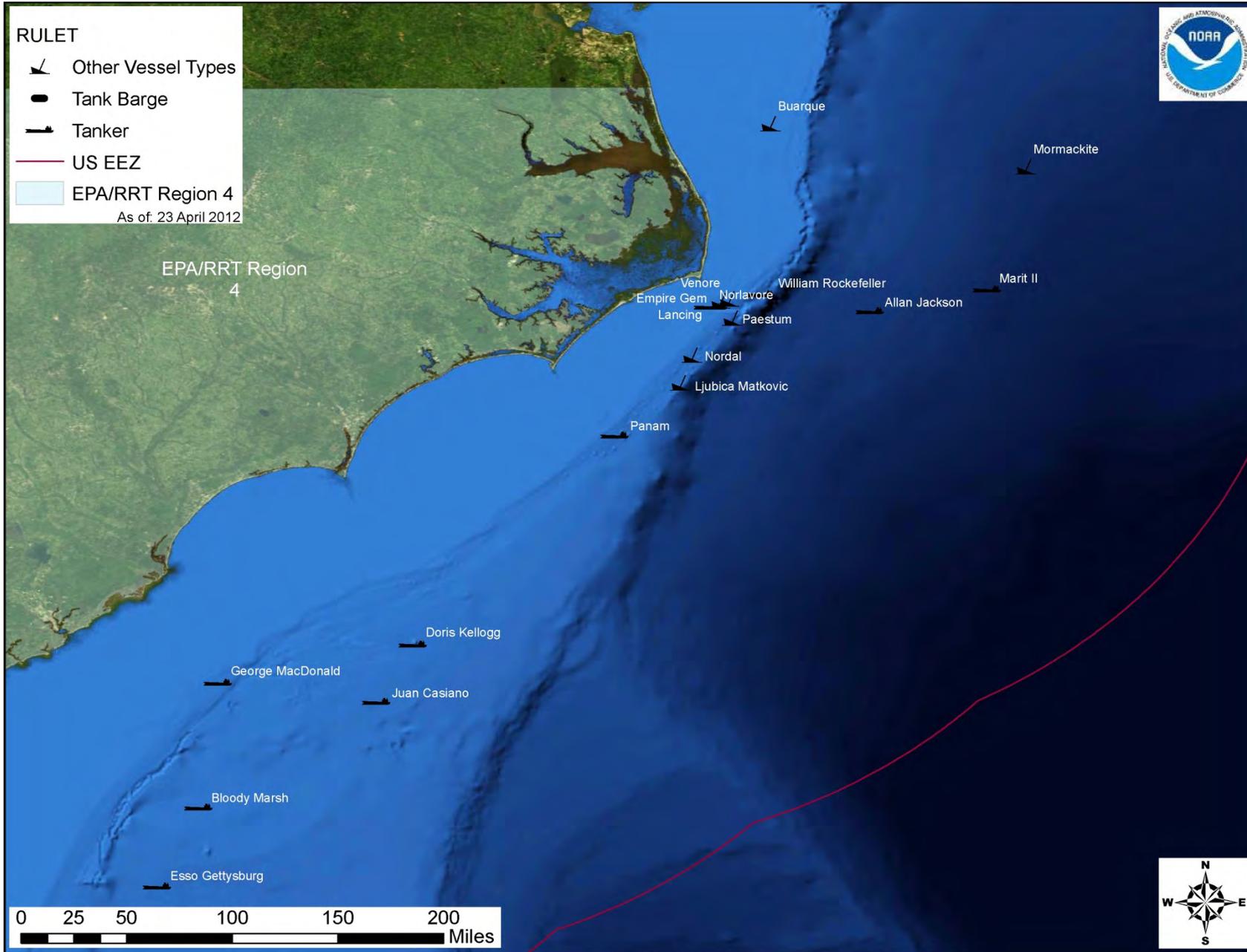
Current Age (yrs) of Shipwrecks



Number of Vessels Lost by Year







Name	WCD Final Score	MP Final Score	USCG District
Francis E. Powell	18	14	5
China Arrow	18	10	5
W.L. Steed	17	13	5
William Rockefeller	16	14	5
Lancing	15	12	5
Norlavore	15	12	5
Paestum	15	12	5
Allan Jackson	14	11	5
Buarque	14	11	5
Marit II	14	11	5
Nordal	14	11	5
Venore	14	11	5
Oneida	13	12	5
Mormackite	13	12	5
Cayru	13	11	5
Ljubica Matkovic	13	11	5
India Arrow	13	10	5
Empire Gem	12	12	5
Marine Electric	12	11	5
Northern Pacific	12	11	5
Swiftscout	12	11	5
Panam	12	9	5

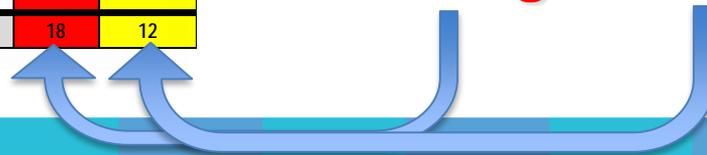
Vessel Risk Factors		Data Quality Score	Comments	Risk Score	
Pollution Potential Factors	A1: Oil Volume (total bbl)	Medium	Maximum of 77,000 bbl, known to be leaking	Med	Med
	A2: Oil Type	High	#2 fuel oil		
	B: Wreck Clearance	High	Not cleared		
	C1: Burning of the Ship	High	Burned for two days		
	C2: Oil on Water	High	Oil on the water at time of casualty		
	D1: Nature of Casualty	High	Hit by two torpedoes, explosion, fire		
	D2: Structural Breakup	High	In one piece		
Archaeological Assessment	Archaeological Assessment	High	Detailed sinking records of this wreck exist as well as dive reports, assessment is believed to be very accurate	Not Scored	Not Scored
Operational Factors	Wreck Orientation	High	Vessel is upside down	Not Scored	Not Scored
	Depth	High	Vessel is 180 feet deep		
	Visual or Remote Sensing Confirmation of Site Condition	High	Technical dive site		
	Other Hazardous Materials Onboard	High	No		
	Munitions Onboard	High	Small arms, 5-inch gun and two .30 caliber Lewis machine guns		
	Gravesite (Civilian/Military)	High	Yes		
	Historical Protection Eligibility (NHPA/SMCA)	High	NHPA and possibly SMCA		
			WCD	Most Probable	
Ecological Resources	3A: Water Column Resources	High	Large spills of light fuel oil can have significant impacts to water column resources; smaller spills are less persistent in open water	High	Low
	3B: Water Surface Resources	High	Under the WCD, slicks spread over large surface areas; smaller spills are less persistent; even light sheens can become concentrated in convergences with <i>Sargassum</i> mats which host many species	High	Med
	3C: Shore Resources	High	Mostly expect to have light oiling by light fuel oil on outer sand beaches	Med	Low
Socio-Economic Resources	4A: Water Column Resources	High	Moderate area of water column would be impacted in fishing grounds	Med	Low
	4B: Water Surface Resources	High	Relatively large area of offshore surface water would be impacted including important shipping lanes and a national marine sanctuary	High	High
	4C: Shore Resources	High	Relatively large length of shoreline affected in areas with high-value and sensitive resources	High	Med
Summary Risk Scores				18	12

Lubrafol Specific Scoring

Each risk assessment has scored and unscored components.

The scores are compiled to generate a Worst Case Discharge and a Most Probable Discharge (10%) score for each vessel.

WCD High **MP Med**

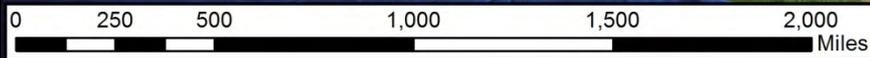
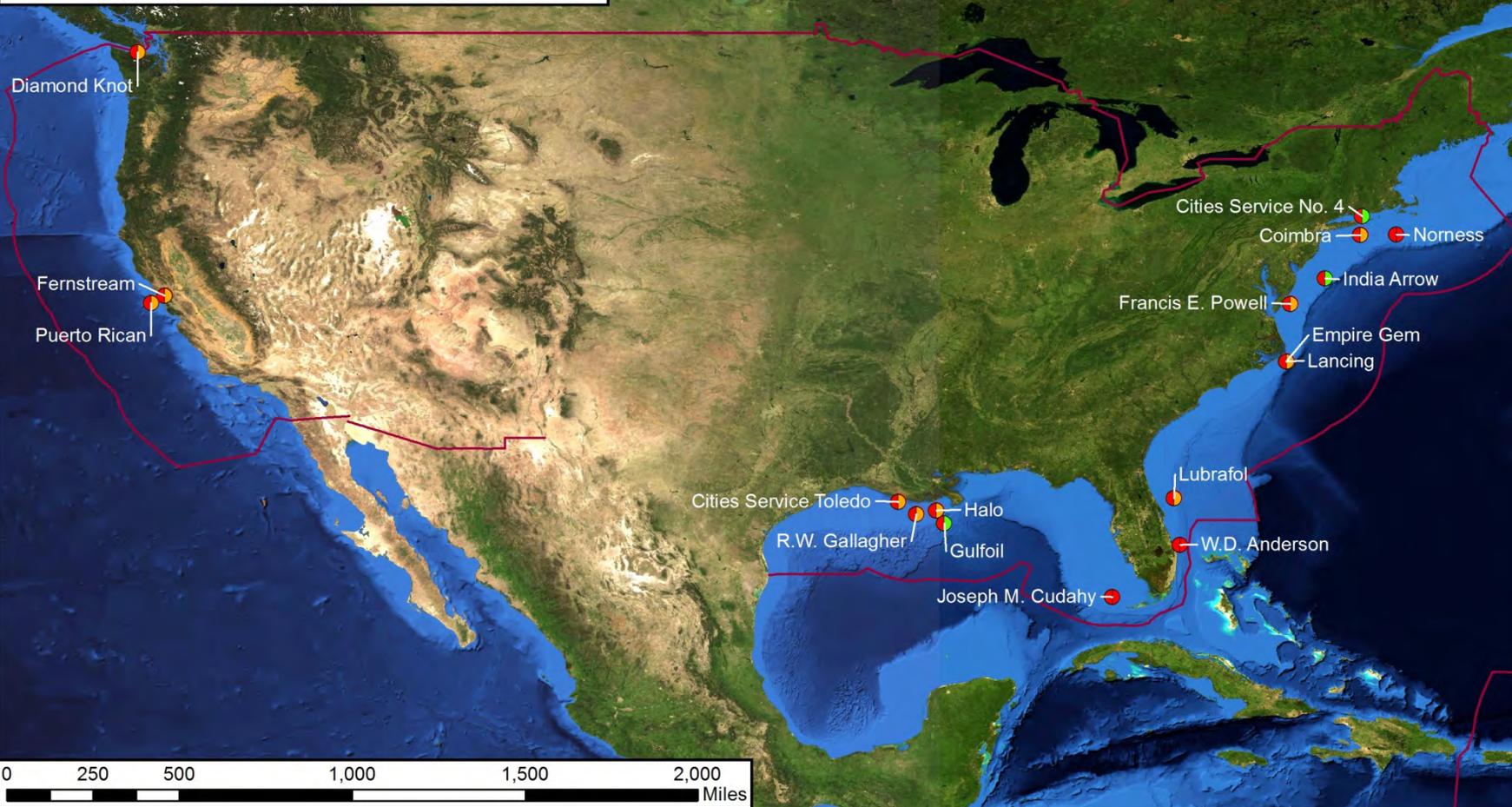


RULET Wrecks Recommended for USCG Assessment

Final Score WCD/MP

- H/H
- H/M
- H/L
- M/M
- M/L
- L/L

— US EEZ



Vessel Scores	Possible NOAA Recommendations	Number of Vessels 2013	Number of Vessels 2015
High (+1 Med)	Wreck should be considered for further assessment to determine the vessel condition, amount of oil onboard, and feasibility of oil removal action	17	17, (+1,-1)
High & Med. (Unk Loc.)	Use surveys of opportunity to attempt to locate this vessel and gather information on the vessel condition	46	44
High & Med.	Conduct active monitoring to look for releases or changes in rates of releases	22	24
All	Be noted in the Area Contingency Plans	87	88
All	Conduct outreach efforts to regional users.	87	88

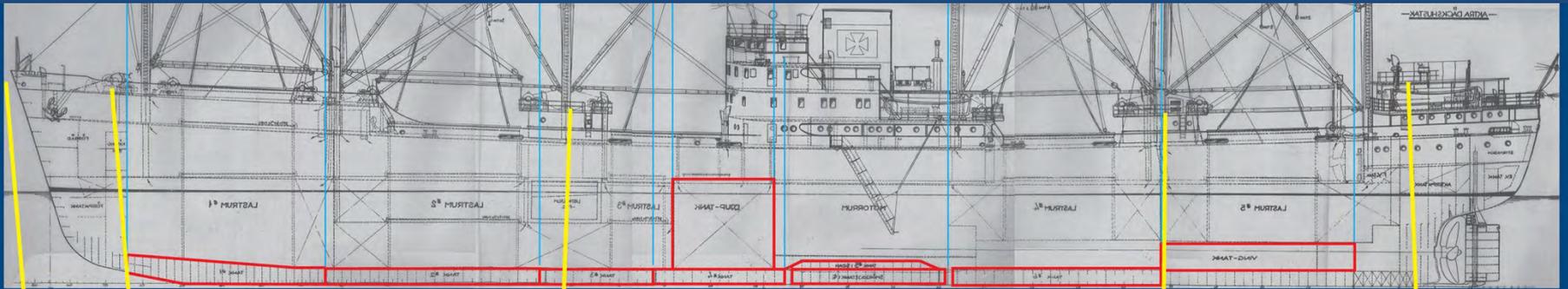
RULET Assessment Updates

2013 Category Rank	Score Range	# for WCD	# for MP
High Priority	15-21	36	6
Medium Priority	12-14	40	36
Low Priority	7-11	11	45
2015 Category Rank	Score Range	# for WCD	# for MP
High Priority	15-21	35*	6*
Medium Priority	12-14	39**	34**
Low Priority	7-11	13	47

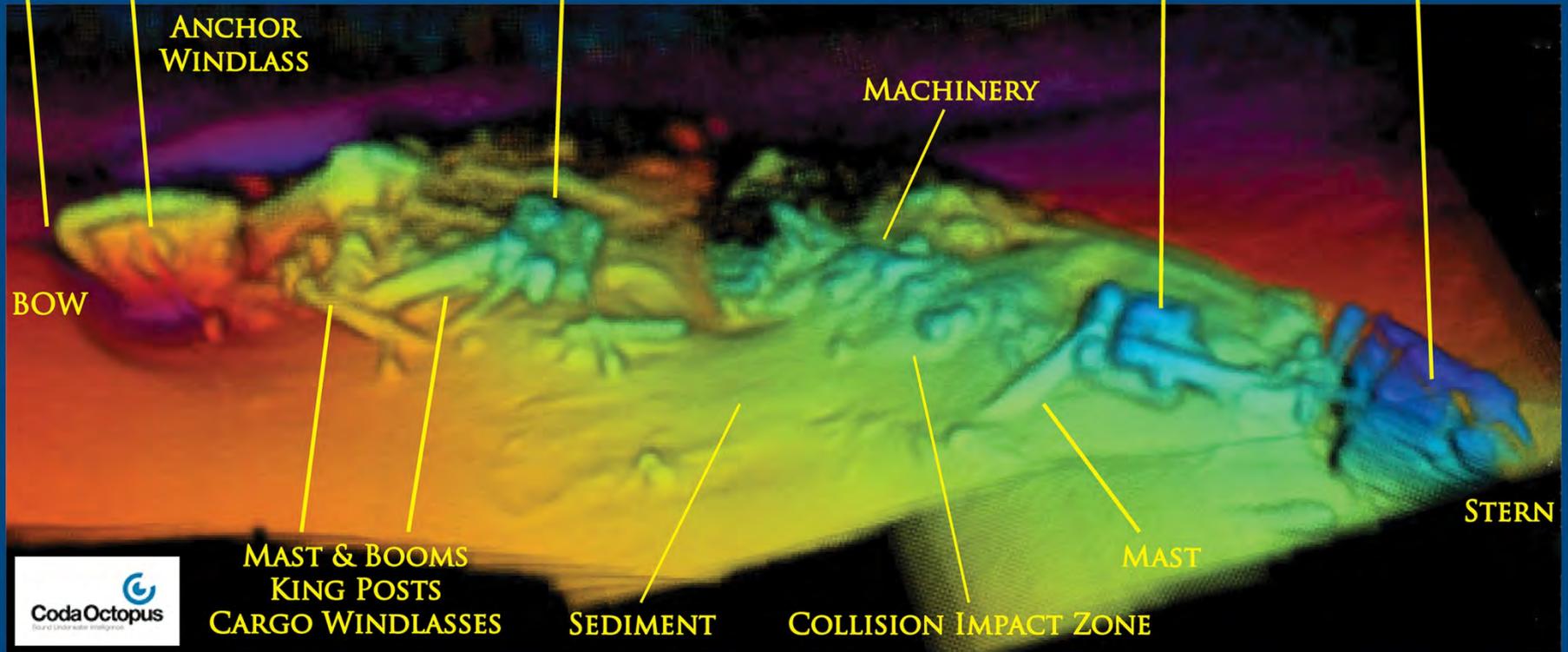
Vessel Assessments	Date	Status	WCD	MP
* <i>Fernstream, SF CA</i>	3/14	WCD down, MP same following survey, monitoring		
** <i>W.E Hutton, NC</i>	8/14	Found due to sheening, correctly identified, plugged, monitoring		
* <i>USNS Mission San Miguel, HI</i>	8/15	Found assessed, scores reduced from H/M		
<i>Coimbra, LI NY</i>	8/15	Satellite detection of sheening, no shoreline impact		
* <i>USS Murphy, LI NY</i>	8/15	Found due to sheening, similar to <i>Coimbra</i> , not yet scored		
<i>Argo, OH</i>	9/15	Assessment and recovery fall 2015. Now Low/Low after removal.		
<i>Coast Trader</i>	6/16	ROV survey of opportunity, recent side scan – substantially intact	*	*

City Services Barge #4 — undergoing corrosion assessment by USCG Academy

FERNSTREAM

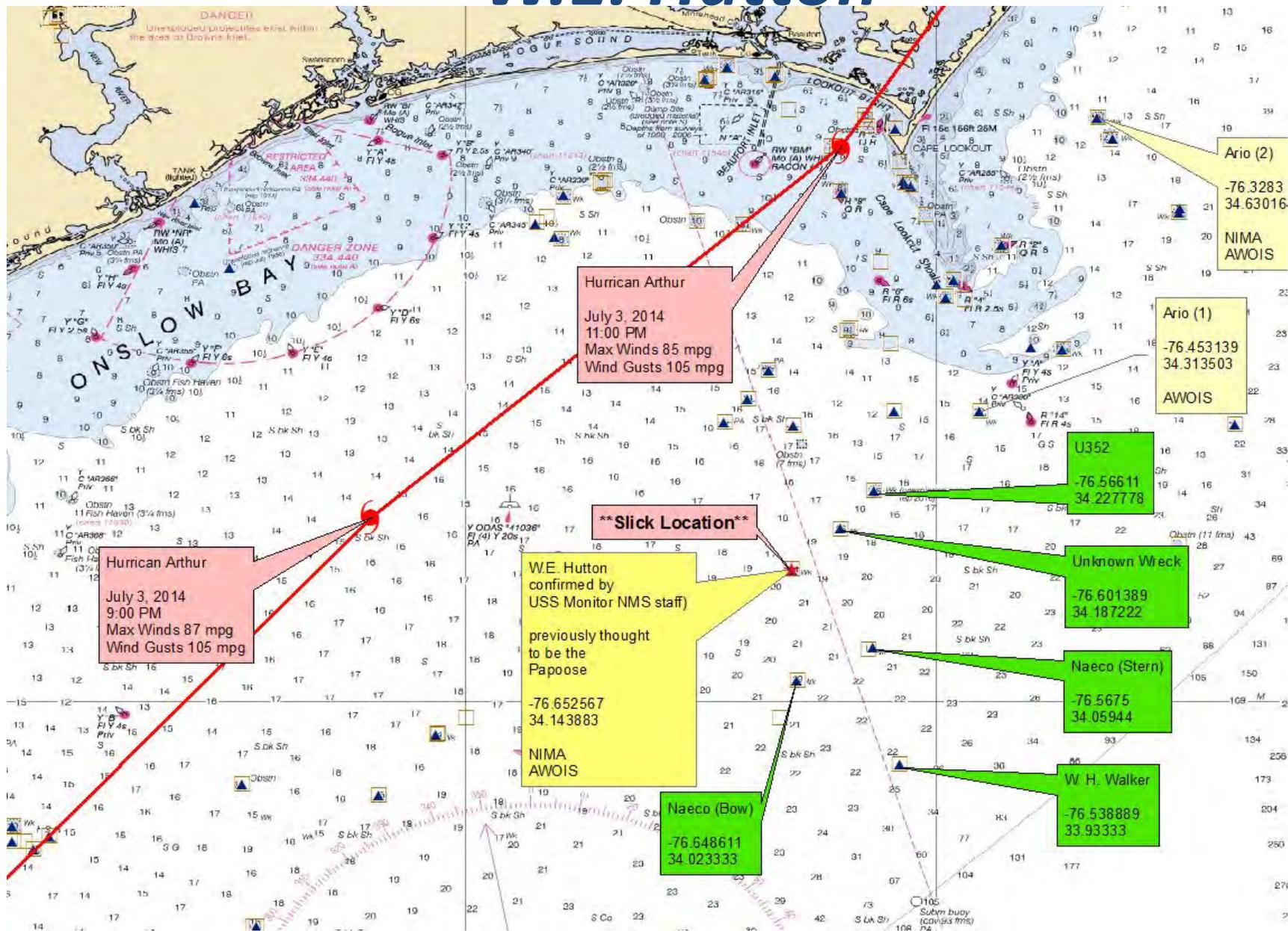


PROFILE VIEW



DOWNWARD DECK VIEW

W.E. Hutton



W.E. Hutton

- Excluded from RULET based on NOAA video footage showing all tanks open to the sea. Later determined to be wire dragged tanker *Ario*.
- The wreck formerly identified as *Papoose*, now known to be *W.E HUTTON*. 453 ft tanker carrying 65,000 barrels of #2 heating oil plus bunkers, torpedoed by a German U-Boat and sank on 18 March 1942. ~125 feet deep, upside down, port side buried
- *W.E. Hutton*, *Papoose* and *Ario* are all in the same general vicinity.

Anomaly Reports include Wrecks

MARINE POLLUTION SURVEILLANCE REPORT

Analysis Provided by: The National Oceanic and Atmospheric Administration/National Environmental Satellite, Data and Information Service (NOAA/NESDIS)

REPORT DATE: AUGUST 20, 2015
REPORT TIME: 0030Z (8/19/2015 2030 EDT)
ANALYST: TURK

DATA SOURCE: LANDSAT-8 OLI
MODE: Multispectral
RESOLUTION: 30 meter
IMAGE DATE/TIME: 8/19/2015 1533Z (1133 EDT)

Legend

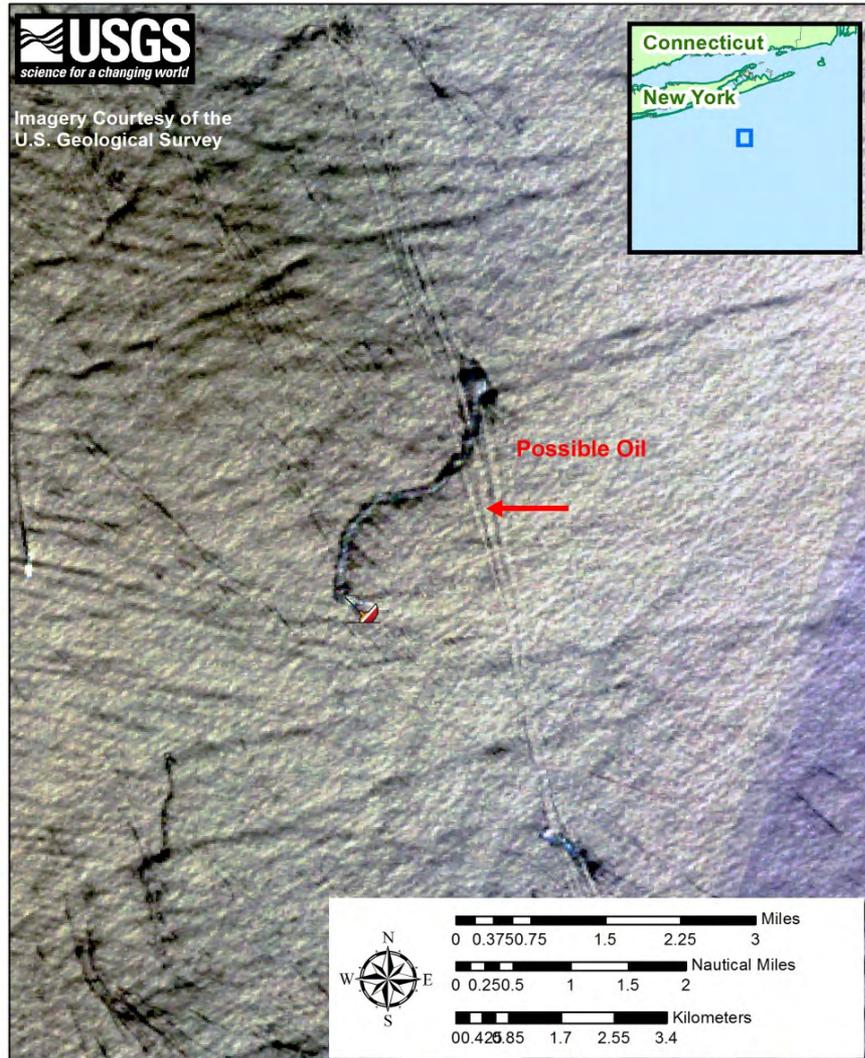
-  Possible Oil
-  False-Positive (not oil)
-  Torpedoed Tanker Coimbra :
[40°24'01" N / 72°22'12" W]
-  1.6 km² Area of Possible Oil

CONFIDENCE: High

REMARKS:

An oil slick was detected emanating from the torpedoed tanker Coimbra approximately 53 miles southwest of Montauk Point. The slick was 2.9 miles in length and up to 0.3 miles wide. Skies were clear and winds were from the southeast at 5 knots at the time of the image.

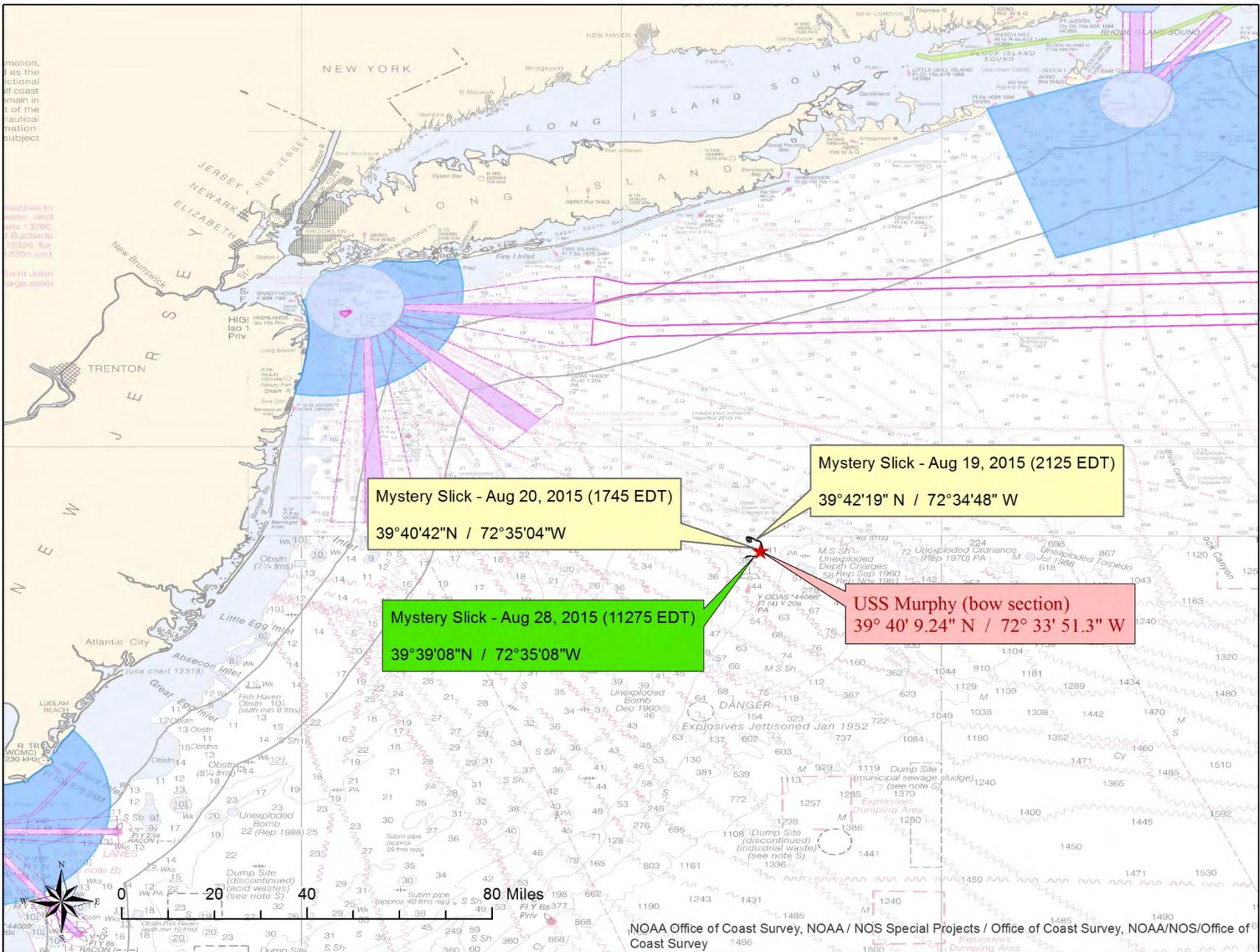
Confidence is high that the slick is oil because the Coimbra is a known repeat leak source and portions of the slick appear shimmery in the high resolution imagery.



Information as the fictional of coast main in t of theautical nation subject

aches to warn, and ens n 3200 Buzzards 12326, for 12303 and 12304

Small John large scale

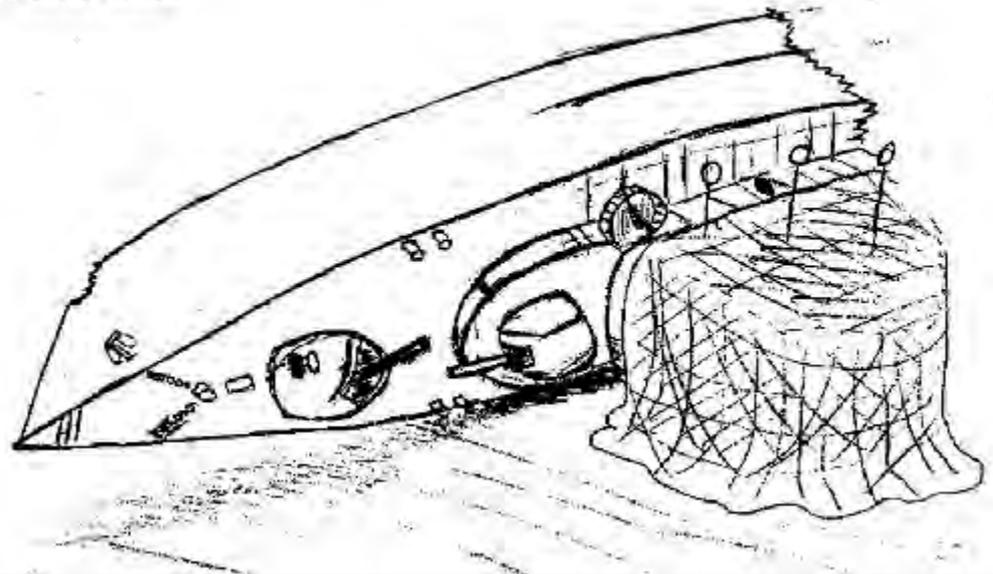


U.S.S. Murphy (Bow)

Sheening 8/15



Richard Kohler



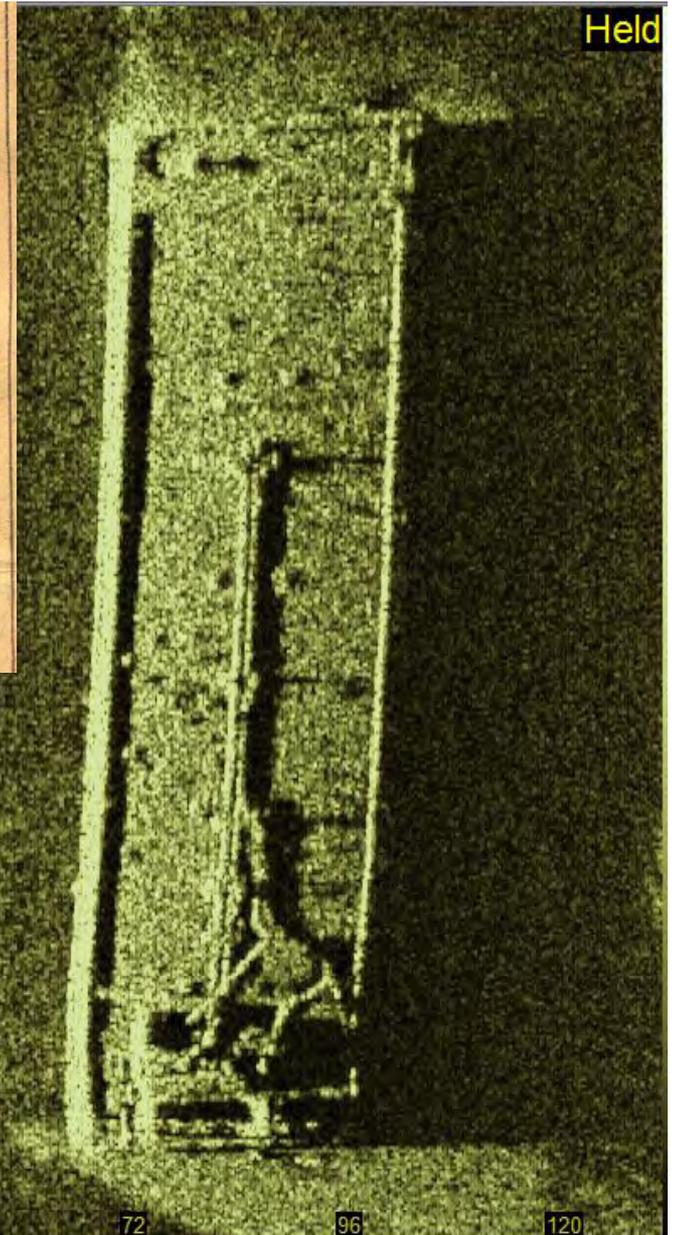
Argo

New location
identified in U.S.
waters 8/15

Kingsville, Oct. 21 — Turbulent Lake Erie—holder of many secrets within its shallow and treacherous waters—fought hard to-day to guard two of its latest mysteries. Heavy seas handicapped search for a lost barge laden with benzol, and prevented grappling operations to recover the body of a Kingsville fisherman.

The search for the barge Argo centred at Pelee Island, 14 miles out on the lake, where it was cut adrift from a tug early yesterday. The Argo was abandoned by the tug Syosset, of Bayonne, N.J., after taking on several tons of water through a leak. Collision with the craft might result in an explosion, as its hold contains 100,000 gallons of benzol, shipping was warned. (Oct 1937)

Held



24

48

72

96

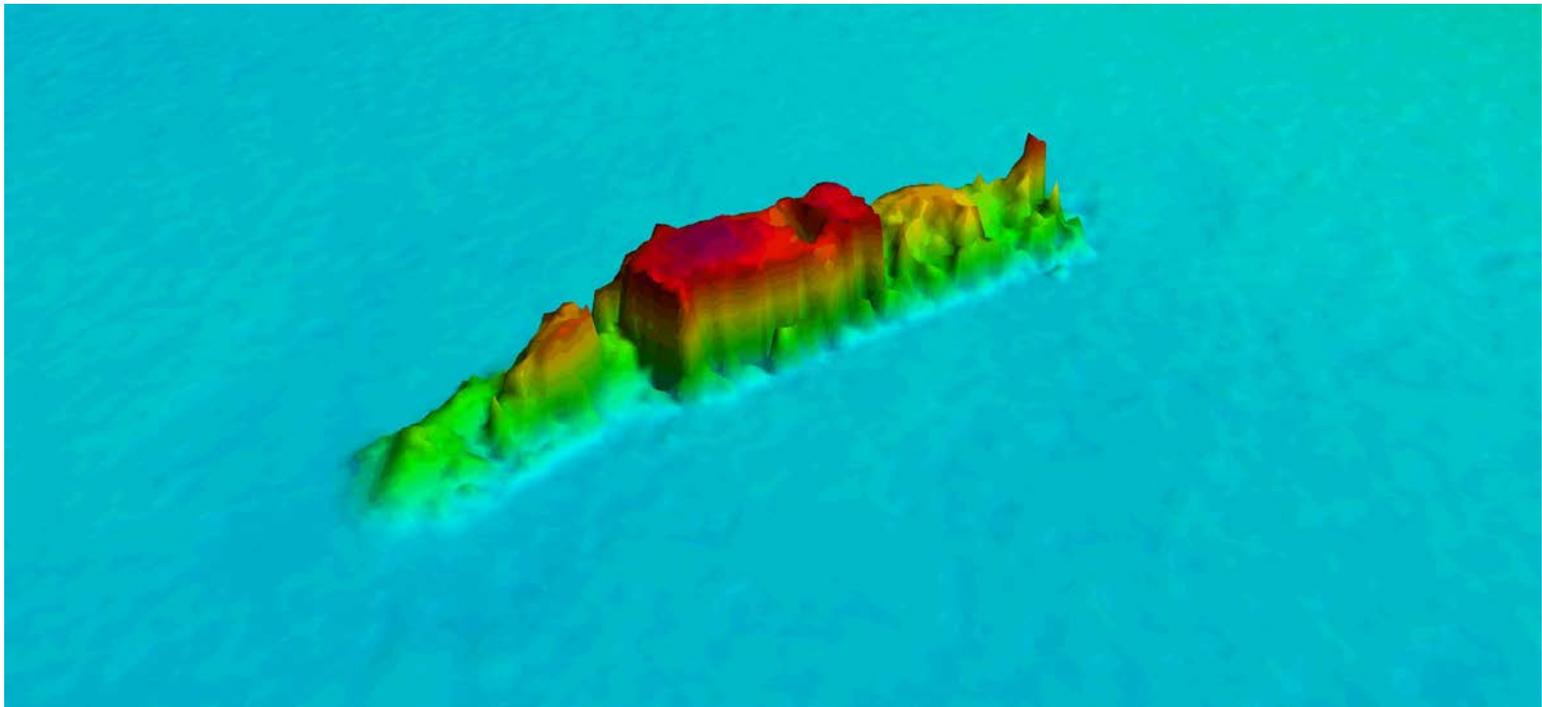
120

Coast Trader

Recently found in Canadian waters

ROV based survey of opportunity June 1st 2016

Looks more intact than expected, score could change



Questions?

RULET information and updates

sanctuaries.noaa.gov/protect/ppw/

Lisa Symons 240-533-0692

Lisa.Symons@noaa.gov

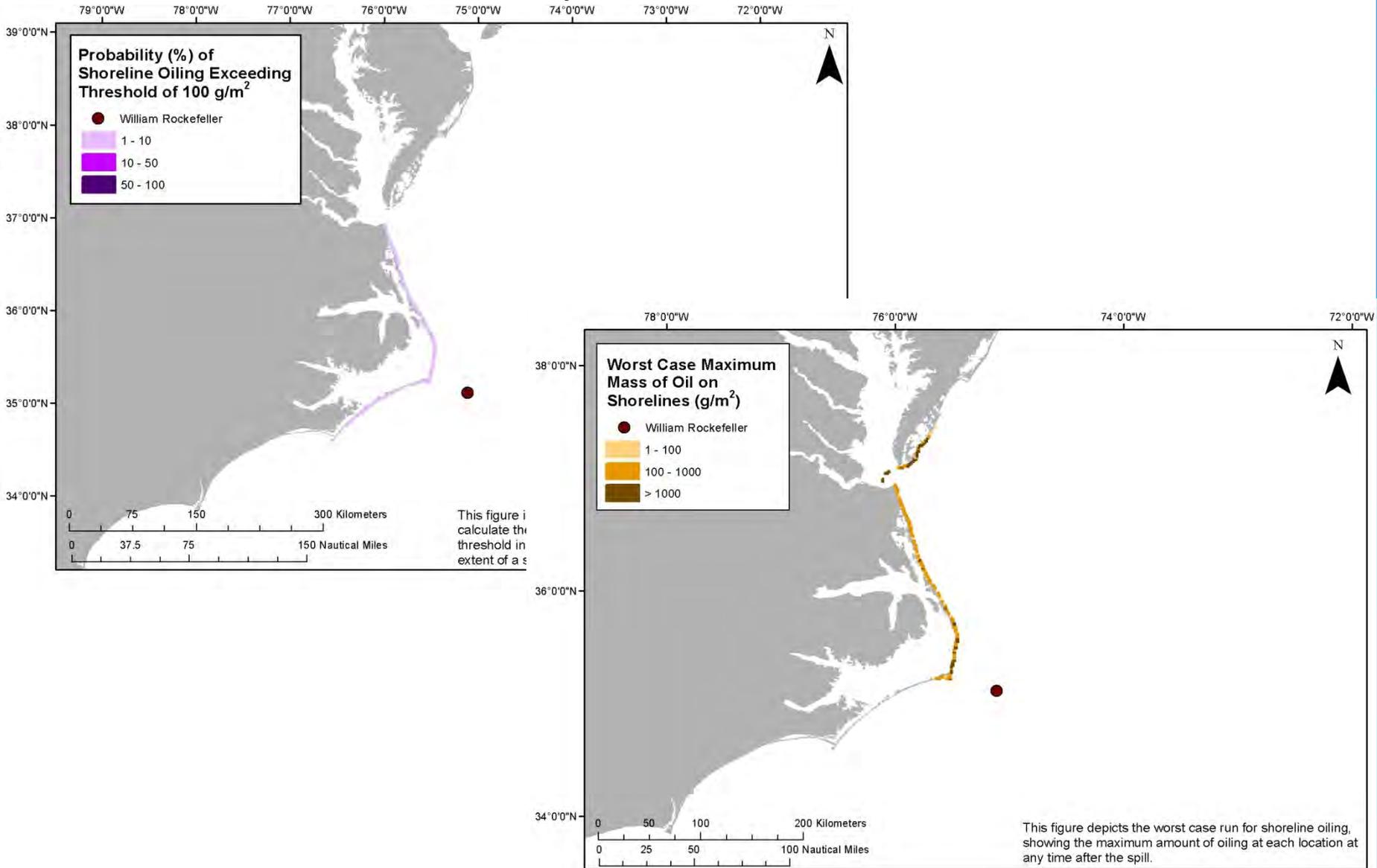


ENVIRONMENTAL
RESEARCH
CONSULTING

Consequence	Impact Measure	Impact Threshold
Impact to ecological resources - water surface	Water surface area exposed to floating oil	10 g/m²
Impact to ecological resources - shoreline	Shore length exposed	100 g/m²
Impact to socioeconomic resources – water surface	Water surface area exposed to floating oil	0.01 g/m²
Impact to socioeconomic resources - shoreline	Shore length exposed	Sheen (1 g/m²)
Water column impact	Water volume exposed to dissolved aromatic concentrations	1 ppb

William Rockefeller: 14,054 gross tons

Pollution Potential: in theory 150,000 barrels of Bunker C



76°0'0"W

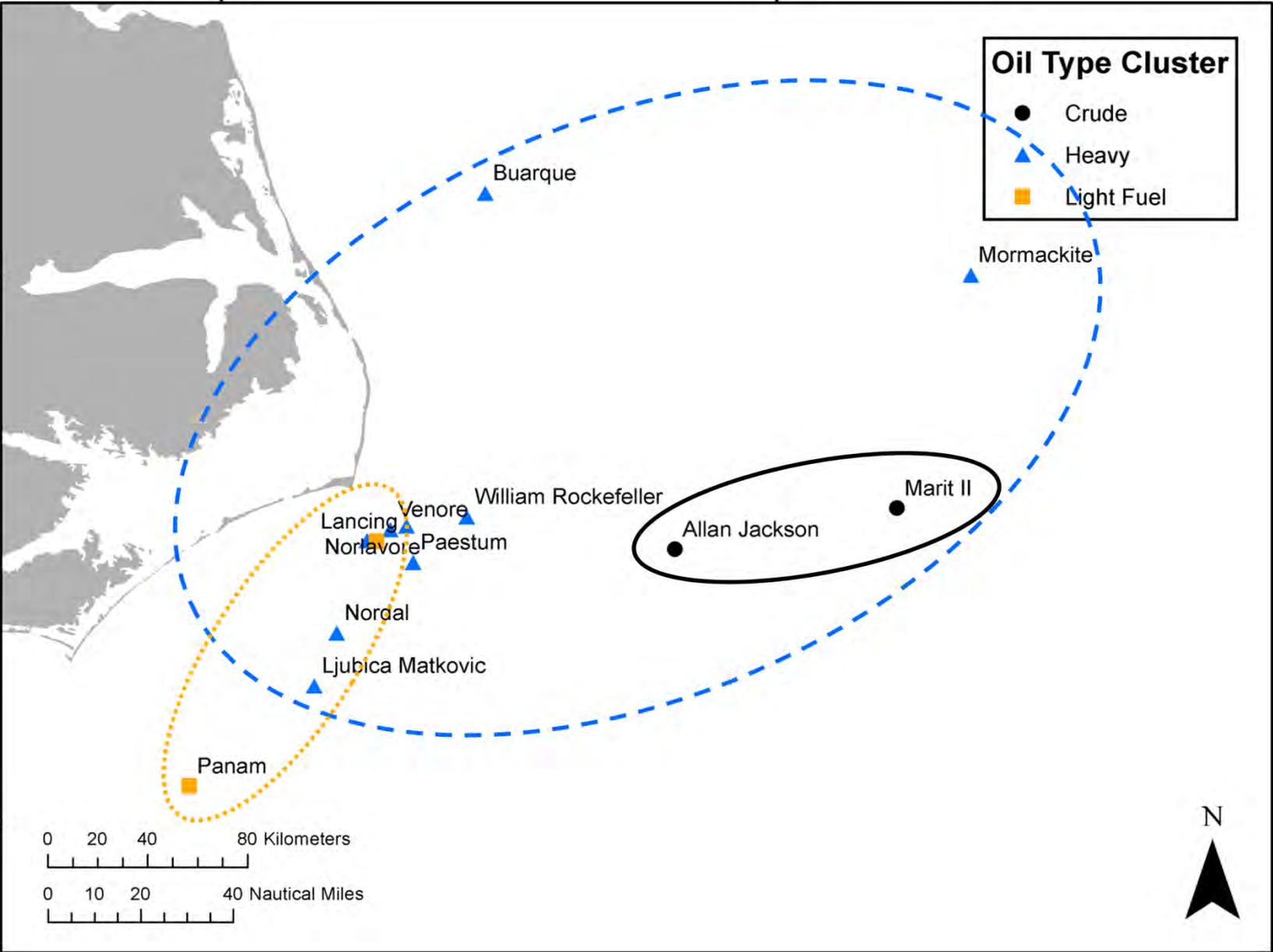
74°0'0"W

36°0'0"N

34°0'0"N

Oil Type Cluster

- Crude
- ▲ Heavy
- Light Fuel



Buarque

Mormackite

Lancing

Norlavore

Venore

Paestum

William Rockefeller

Nordal

Ljubica Matkovic

Marit II

Allan Jackson

Panam

0 20 40 80 Kilometers

0 10 20 40 Nautical Miles

